JANUARY/FEBRUARY 1997

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9 What is a cool climate?

26 Pinot Blanc demands consumer attention

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61 SUPPLIER SHOWCASE: Oak Cooperage & Supplies

72 SMART VITICULTURE: GDC works wonders

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▸WINEMAKING
▸WINEMARKETING

CONTENTS

4 *COVER STORY:* **Sterling's capacity increases 25%**

9 **What is a cool climate?**
By Andrew G. Reynolds

22 *SAVVY MARKETING:*
Winelicious Cuisine Cellars
By Carol Caldwell-Ewart

26 *VARIETAL REVIEW:*
Pinot Blanc demands consumer attention
By Eleanor & Ray Heald

35 **Pinot Blanc makes unique food matches**
By Eleanor & Ray Heald

38 **Ensuring quality in corks from Portugal**
By Mike Miller

45 **How many barrels are needed in barrel trials?**
By John P. Towey & Andrew L. Waterhouse

50 **Coating agents for corks**
By K.C. Fugelsang, Devin Callaway, Tamiko Toland, C.J. Muller

56 **Communicating with Hispanic employees**
By Trula M. LaCalle, PhD

59 **Project Quercus findings**

61 *SHOWCASE:* ***OAK*** **Cooperage & Supplies**

69 *WINERY MANAGEMENT:*
Planning for Success
By Gary Baldwin

READER SERVICE

84 **Bookshelf**

87 **Advertiser Index**

DEPARTMENTS

6 **FREE RUN**
Where there's smoke, there's Merlot!
By Patrick Campbell

71 **WINE & HEALTH**
Moderate alcohol use research funded

72 **SMART VITICULTURE**
GDC works wonders
By Richard Smart

75 **THE WINE LAWYER**
How the cat keeps its skin
By R. Corbin Houchins

81 **WINERY WATER & WASTE**
Industrial gray water recycling
By David Storm

83 **GUERRILLA MARKETING**
Guerrilla persuasion
By Jay Conrad Levinson

85 **IN THE CELLAR**
Cellar Rat Ball
By Jake Lorenzo

Cover photo: Don Neel

Emptying fermented Pinot Noir grapes from a rotary fermenter

Sterling's capacity increases 25%

New processing equipment installed at Sterling Vineyards (Calistoga, CA) for the 1996 harvest enabled the winery to increase production by 25% from 5,500 tons/year to 7,000 tons/year. Construction of the new 60ft x 120ft press pad plus new equipment cost $3.2 million.

Sterling installed six Velo TM250 (250 hectoliter capacity) rotary fermenters with refrigeration jackets above two relocated Willmes TP-8 (8,000L capacity) tank presses, with a 24-inch auger for pomace removal underneath. More than 800 tons of red grapes from the 1996 harvest were fermented in 41 lots in the rotary fermenters with indigenous yeast, and the peak fermentation temperature was 85°F.

Sterling added the rotary fermenters to supplement the capacity of its existing upright stainless steel fermenters. "We expect the new fermenters to help achieve better flavor and color extraction earlier in handling, allowing the winemaker to avoid the later stage of alcoholic extraction," says Cary Gott, Sterling Vineyards executive vice-president.

Sixteen loads of Merlot averaged five days in the rotary fermenters (three to six days skin contact). The Merlot was pressed off at an average of 3° Brix. The length of time in the rotary fermenter depended on initial must temperature, rate of fermentation, color development, and extraction of astringent components.

Thirteen loads of Cabernet Sauvignon averaged six days (four to 10 days skin contact). Pressing occurred at an average of 3.3° Brix.

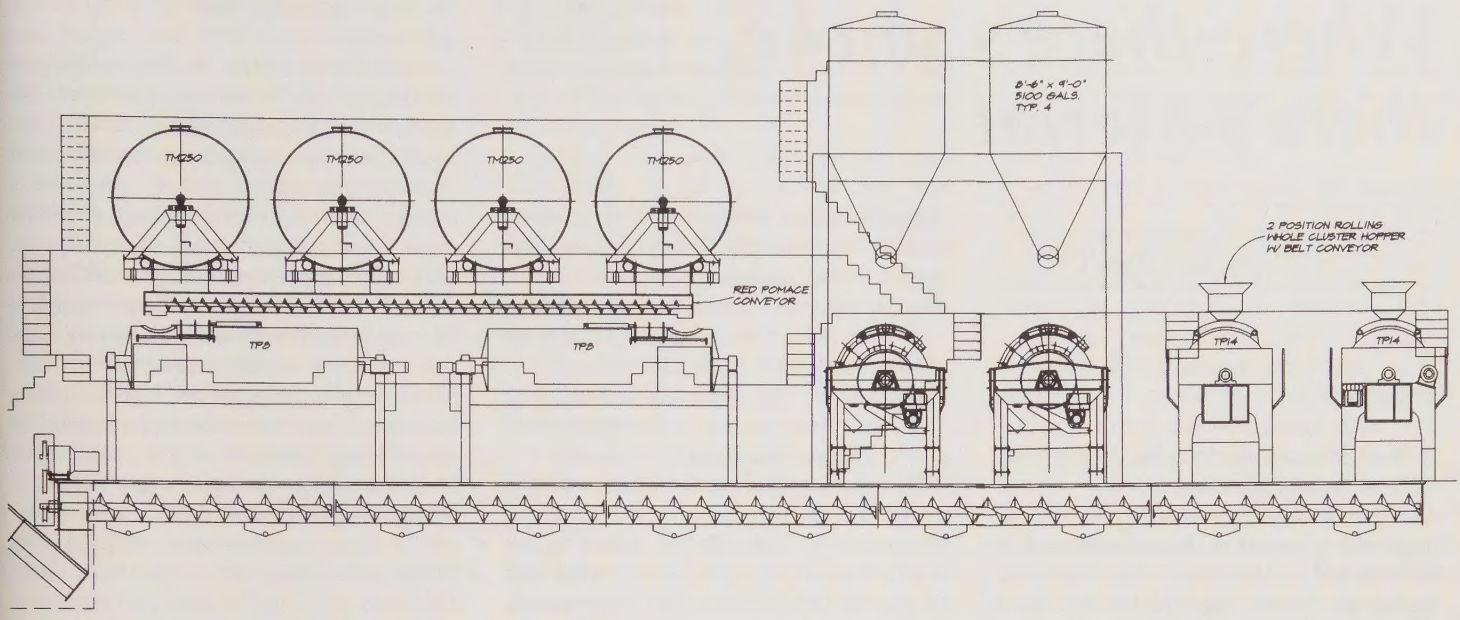
Five loads of Cabernet Franc averaged 4.5 days (three to seven days skin contact). Pressing occurred at an average of 2.6° Brix.

Four loads of Pinot Noir averaged 7.5 days, (six to eight days skin contact). Pressing occurred at an average of 0.4° Brix.

One load each of Sangiovese, Syrah and Petit Verdot resided six to seven days in a rotary fermenter. Pressing occurred at 0.5° Brix for Sangiovese, 9.8° Brix for Syrah, and 5.5° Brix for Petit Verdot.

One new Delta E6 destemmer/crusher (50 ton/hr), with adjustable and/or removable rollers, was installed alongside an existing AMOS destemmer/crusher (50 ton/hour). Two new Delta PM 60 (60 ton/hr) mobile progressive capacity must pumps for crushed grapes or fermented must were also added.

Four jacketed dejuicing tanks (25 ton capacity), built by Santa Rosa Stainless Steel (Santa Rosa, CA), were installed above two new Diemme AR 150 (15,000L capacity) tank presses with axial feed. "The dejuicing tanks



Equipment drawing shows four of six rotary fermenters, two of four dejuicing tanks, six tank presses, and pomace auger. Drawing provided by Steve Koster, Winery Process Consultant.

give us the flexibility to cold soak destemmed white grapes and increase extraction of varietal character from grapes grown in warmer locations that mature with low flavor development," notes Gott. Selected lots of Chardonnay and Sauvignon Blanc were cold soaked in 1996.

Two Willmes TP-14 (14,000L capacity) tank presses were also relocated onto the new press pad.

Layout design of the new press pad equipment, including rotary fermenters and dejuicing tanks, was done by Steve Koster, Winery Process Consultant (Napa, CA). Summit Engineering (Santa Rosa, CA) was the project engineer providing civil and structural engineering. BDM Construction (Santa Rosa, CA) was the general contractor who relocated the presses and built and installed the superstructure, dejuicing tanks, and rotary fermenters. The process piping was installed by NMI Industrial Contractors (Rancho Cordova, CA).

The construction provided 500 sq. ft. of new production office space, 500 sq. ft. of new storage/utility building space, and 7,000 sq. ft. of open production space. ■

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Where there's smoke, there's Merlot

by Patrick Campbell, owner/winemaker
Laurel Glen Winery, Glen Ellen, CA

"May I recommend a wine by the glass, sir?"

"Uh, yeah, sure."

Don't tell me. Merlot. Hundred to one, he'll recommend a Merlot.

Where'd this Merlot thing come from, anyway? Nine out of 10 are undrinkable: weedy, thin, miserable excuses for wine — hardly better than White Zin. And they can't plant it fast enough. All over the place: the hotter the climate, the deeper the soil, the higher the tonnage, the better. There'll be twice as much on the market by 1999.

Now there's a great thought: toast in the millennium with your lovely glass of Merlot. By then it'll be ubiquitous, and they'll be on to something else and all that Merlot will be grafted over to . . . .

"We have a lovely Merlot at $6 a glass, sir. Everyone likes it."

"Uh, uh. Any chance of something a little less popular? Grenache or Carignane, for example?"

Like he's ever heard of them. Might as well ask for a Vacqueyras. Or a Mourvèdre. Talk about some great wines: rich, ripe, wild. Great mouthfuls of grapey, funky flavor. Put a glass each of Merlot and a Carignane/Grenache/-Syrah blend in front of today's wine drinker, and you know he'll reach for the Merlot. Talk about social conditioning. Talk about spineless. Too much character and flavor in those peasant varietals — he might actually taste some real fruit, god forbid.

And while we're on the subject of Merlot, maybe someone could let me know when this cigar craze started. Like have I been living under a rock all these years or something?

Turn around these days, and there's a cigar. Cigar magazine this, cigar extravaganza that. Super models, guys in Italian suits, Palm Beach types: they wouldn't be caught dead without one. And it's not just the beautiful people, either. Overweight guys with beards, shoe salesmen, provincial stockbrokers. No cigar? Forget about it.

And how about those cigar dinners? Five courses of great food, each paired with a cigar of appropriate compatibility. We're not talking fried plantains with Havanas and jerk chicken with Jamaican stogies, here. Try matching poached Dover sole with a mild Macanudo or grilled sirloin smothered with morels accompanied by a robust Montecristo. It doesn't get any better than that! Unless the wine of the evening is Merlot.

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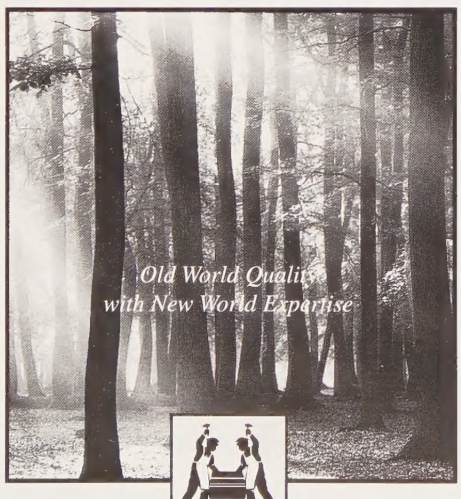

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You go to a wine tasting these days, and before half time someone's got his cigar lit and is busy smelling up the place. Your nose is deep into a Pinot Noir, inhaling, reflecting, pondering its terroir. Ahh, that truffly, earthy decadence. Ooh, those marvelous toasty, oaky fragrances. Mmmm, that hedonistic, smoky aroma . . . pungent, earthy, green, weedy . . . could this actually be a Merlot? Metallic, stale, sewer gas, stale ashtray . . . smells like a cigar. It is a cigar. Some guy 50 yards away is smoking a cigar!

And just try telling him to show a little courtesy. Geez, it's as if you'd insulted his mother. Ten to one you'll get a lecture on civil rights, and don't forget that brave men died in distant lands to secure my freedom to smoke cigars, and so on. Yeah, well, cigar smoking is to personal freedom as yelling "Fire" in a crowded theater is to free speech, you respond. It's no use . . . .

Now don't get me wrong. Smoking has its place. I've spent more than my fair share of time in rooms filled with blue smoke, and I have an uncommon appreciation for sitar music and brown rice with tofu to prove it. Didn't inhale though, which is good advice for cigar smokers, too. Just make sure to maintain a good daily regimen of red wine (preferably not Merlot) consumption for health's sake. But I digress.

Now, you don't have to be an elitist to smoke cigars, though I've observed that it helps to act like one. Image is important. An informal poll of cigar aficionados reveals the following: cigar smokers prefer board rooms over city editor desks; captains of industry over labor union officials and other left-leaning sorts; Diamond Jim Brady over Walter Winchell; cigar fondlers over cigar chompers; and, of course, tuxedos and gowns over rumpled suits, which is ironic because smoke-infused evening attire is better discarded and buried. All of which brings me back to Merlot.

Cigar smoking and Merlot drinking are incontestably unnatural activities, as the following behavioral study would doubtless corroborate. Blindfold a panel of subjects and put in front of them a glass each of Merlot, Pinot Noir, and Cabernet (or for that matter, Merlot and any two other red wines). First, suffuse the room with crystalline alpine air as the panelists consider the wines; then, after 10 minutes, introduce cigar smoke. You will notice a distinct *initial* lack of interest in the Merlot, but upon introduction of the smoke, Merlot consumption becomes avid.

Two obvious conclusions flow from this study: 1) the Merlot, weedy and insipid in the presence of other wines and pure air, is exposed as a vinous fraud, and 2) Merlot and cigars share an affinity (occasioned, no doubt, by mutual cancellation of flaws).

What remains then to be explained is why this sudden and unhappy affection for Merlot and cigars came about.

I submit that an ingenious marketing plot may be behind it all, and though I have no proof, several observations suggest that the cigar fad, at least, may be fueled by forces greater than the best marketing minds of Cuba and Nicaragua. The requisite cigar paraphernalia — fancy humidors that make custom wine cellars look cheap, tip cutters of exotic metals, cognac snifters, and so on — have purveyors of luxury goods licking their chops.

Furthermore, as the rich get richer and the poor poorer, regular schmucks have become an endangered species; but with a fine cigar in hand, you too can be a member of the upper crust and feel like a robber baron.

As for the Merlot craze, it's beyond me.

Equally unclear to me is why some of history's finest men (Churchill, H.L. Mencken, Groucho Marx, Che Guevara, George Burns, come to mind) were confirmed cigar smokers. And while we're admitting exceptions to the rule, I must acknowledge that the Merlot grape can make an excellent wine — I had one once.

No doubt this article will occasion the usual chorus of outrage from cigar smokers and champions of Merlot. But before you send in your two cents' worth, please honestly answer this question: Do you truly plan to usher in the millennium with a cigar and a glass of Merlot? Or will the maestros of marketing have moved on to other delights by then? ■

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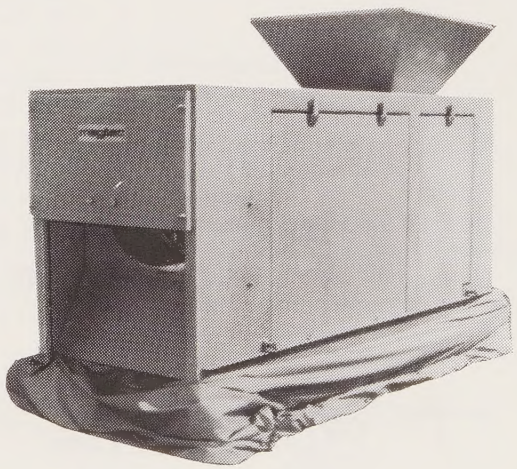

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What is a cool climate?

by Andrew G. Reynolds,
Research Viticulturist,
Agriculture & Agri-Food Canada
Research Centre, Summerland, BC

The recent fourth International Cool Climate Viticulture & Enology Symposium in Rochester, NY, caused many attendees to ask: "What is a cool climate?" This article attempts to provide some new insights into the definition of "cool climate."

A cool climate in viticultural terms has heretofore been defined as those regions for which the mean temperature of the warmest month (MTWM) is less than or equal to 20°C (68°F). Regions which fit this criterion include most of Central Europe (Germany, Switzerland, Luxembourg), Willamette Valley, OR (U.S.), the South Island of New Zealand, and Tasmania (Australia).

However, many winegrowing regions of the world produce cool climate-style wines despite MTWM greater than 21°C. A new system is thus suggested whereby cultivar and site interactions are taken into account. By this system, a cool climate is defined in the context of the ability to mature individual cultivars, hence regions whose MTWM is greater than or equal to 21°C may be considered cool climates for cultivars having mean daily growing degree days (GDD) between veraison-to-harvest (MDVH) less than or equal to 7.0 GDD.

The Okanagan Valley of British Columbia, for example, accumulates 850 to 1,000 GDD by veraison independent of cultivar and season. For many early-maturing cultivars ("Group A"; *e.g.*, Bacchus, Csabagyonge, Schon-burger, Siegerrebe), MDVH is 6.6 to 11.4 GDD; hence, this region (MTWM = 21°C) is not considered a cool climate for these cultivars.

However, in cool seasons (less than 1,100 GDD), Auxerrois, Chasselas, and Gewurztraminer ("Group B"), and Chardonnay, Pinot Noir, and Riesling ("Group C") harvests occur at a point when GDD are no longer accumulating. Minimum MDVH range between 2.4° and 5.0°C (Riesling, 1992, and Gewurztraminer, 1993, respectively) and hence the Okanagan region may be considered a cool climate in the context of these cultivars.

During warm seasons (greater than 1,100 GDD), "Group B" types (Auxerrois, Chasselas, Gewurztraminer, and similar cultivars) mature with greater than 7.0 MDVH, with concomitant higher °Brix and pH and lower titratable acidity.

A veraison-to-harvest index [VHI; (1/MDVH) X 100] provides a useful tool for rating region and cultivar interactions; a VHI greater than 16 suggests that a specific cultivar will mature with less than 7.0 MDVH, and hence is a cool climate cultivar.

True cool climates (*e.g.*, Vancouver Island mean GDD of 902) will consistently mature Group A cultivars during periods when MDVH is less than or equal to 5.0 GDD, but warmer climates (*e.g.*, Bordeaux; GDD of 1,392) may still be considered "cool" for late-maturing cultivars.

Previous definitions of cool climates

Temperature

The empirical notion of a cool climate in terms of viticulture and enology appears to involve wine sensory nuances. N. Becker indicated that white wines produced in cool climates were fresher, more acidic, and finer in bouquet and aroma than those wines

Table I

Regional climates divided into three categories according to the latitude-temperature index [11]

Location — GROUP A
Kew, England; Plymouth, England; Geisenheim (Hesse), Germany; Reims, France; Geneva, Switzerland; Zurich, Switzerland; Kelowna, BC, Canada; Vancouver, BC, Canada; Mosel [district], Germany; Ahr [district], Germany

Location — GROUP B
Strasbourg (Alsace), France; Dijon (Burgundy), France; Macon (Burgundy), France; Stuttgart, Germany; Vienna, Austria; Portland, OR, USA; Boise, ID, USA; Baden [district], Germany; Salem, OR, USA; Auxerre (Burgundy), France

Location — GROUP C
Tours (Loire), France; Bordeaux, France; Sauternes [district], France; Lugarno, Switzerland; Walla Walla, WA, USA; Launceston, TAS, Australia; Nelson, New Zealand; Blenheim, New Zealand; Christchurch, New Zealand; Napier, New Zealand

Table II

Cultivar groups delineated using the latitude-temperature index. [11]

GROUP A
Sub-group 1:
Gewurztraminer, Madeleine Angevine, Reichensteiner, Perle, Schonburger, Triomphe d'Alsace, Muller-Thurgau,
Sub-group 2:
Pinot Blanc, Pinot Gris, Pinot Noir, Pinot Meunier, Chasselas, Sylvaner, Chardonnay, Faber, Kerner, Scheurebe, Siegerrebe, Auxerrois, Aligote, Bacchus

GROUP B
Riesling, Pinot Noir, Chardonnay

GROUP C
Cabernet Sauvignon, Merlot, Cabernet Franc, Malbec, Sauvignon Blanc, Semillon

GROUP D
Grenache, Shiraz, Sultanina, Zinfandel

produced in warmer climates.[5] He further suggested that a cool climate region could be defined by one whose mean temperature of the warmest month (MTWM) is less than 20°C.

Hence, regions as disparate as Bordeaux, Napa (CA, USA), Cape region (South Africa), Willamette Valley (OR, U.S.), and Germany were all considered cool climates despite different capacities to mature certain cultivars.

G. Bentryn offered further refinement to this definition by characterizing cool climates based upon an aggregate of mean high temperature of the warmest month and the mean low temperature of the warmest month.[7] Bentryn addressed the notion of continentality versus Mediterranean influence, and helped elucidate reasons why, for instance, a warm continental region (*e.g.*, New York) tends to produce cool climate-style Cabernet Sauvignon, whereas a warm Mediterranean region of equal mean GDD (*e.g.*, Bordeaux) does not.

Latitude-temperature index

D.I. Jackson and N.J. Cherry introduced the latitude-temperature index [LTI; LTI equals MTWM (60-latitude)], which divided cool climate grape-growing regions into four groups based upon the cultivars grown in each (Tables I, II).[11] Their work indicated that traditional cool climate regions were characterized by LTI less than or equal to 370, and those growing traditional cool climate cultivars (*e.g.*, Gewurztraminer, Pinot Gris, etc.) had LTI values less than 275. A recent modification of this system specific to Europe took into account allowances for global warming.[14]

Genotype and region interactions

Shortcomings of region-based models: A major shortcoming of any regional climatological characterization is, first, the site-specific nature of viticulture, and second, the specificity of site and cultivar interaction. Hence, considering a region as a cool climate based upon data collected from an airport weather station or even a poorly-sited research center does not give an accurate depiction of the region's capacity.

This anomaly was addressed by Jackson and Cherry;[11] for instance, Group A (very cool) regions such as Mosel can mature Group B cultivars (*e.g.*, Riesling) if sites are chosen carefully (*e.g.*, south slopes), while Group C (moderately warm) regions such as Loire can mature Group C cultivars (*e.g.*, Cabernet Franc), although Group B are predicted, if south-facing slopes are used.

Regions with high autumn rainfall predict cultivar groups higher than those grown; instead, in those groups, maturity is delayed and bunch rot forces early harvests. Furthermore, following Becker's logic,[5] white wines of some cultivars may indeed be fresh, somewhat acidic, and possessing excellent aroma, whereas others, by maturing during the warmest period of the year, tend to lack acidity, may be high in pH, contain excessive alcohol, and may possess "cooked" flavors. The need for defining cool climates on a region and cultivar basis was thus suggested by these observations.

Alpha and beta zones

The concept of alpha and beta zones

Table III

Alpha zones* *Mature their fruit when mean temperatures are 9° to 15°C*		Beta zones* *Mature their fruit when mean temperatures are >16°C*
Regions or region x cultivar combinations		
Pinot Noir	**Cabernet Sauvignon**	**Pinot Noir, Cabernet Sauvignon, Riesling**
Burgundy, Alsace, Champagne (France)	Bordeaux (France)	Southern France, Spain, Italy
Baden (Germany)	Coonawarra (Australia)	Southern Europe and north Africa
Marlborough, Canterbury (New Zealand)	Hawkes Bay (New Zealand)	Hunter Valley and Barosssa Valley (Australia)
Adelaide Hills, Yarra Valley (Australia)	Napa Valley (CA, USA)	South Africa
Willamette Valley (OR, USA)	Yakima Valley (WA, USA)	Central Valley, (CA, USA)
Carneros (CA, USA)		Columbia River Valley (WA, OR, USA)
	*[Jackson and Lombard [12]]	

Table IV

MDVH classes for grape cultivars grown in the Okanagan Valley, BC, Canada. Whole numbers are approximations.

Data for Groups B and C are based on GDD compiled by Drought et al.[8]

GROUP A
(MDVH>7.1)

Low TA/high pH common; full maturity in all zones. Not "cool climate" varieties in Okanagan region.
Bacchus (9.4); Csabagyonge (8.4); Schonburger (8.9); Siegerrebe (8.4); Ortega (8.3); Huxelrebe

GROUP B
(MDVH 6.0-7.0)

Occasional low TA/high pH problems in warmer zones. "Cool climate" varieties in poor years.
Auxerrois (6.3); Chasselas (6.7); Gewurztraminer (6.5); Perle (6.5); Kerner (6.5); Muller-Thurgau

GROUP C
(MDVH 3.5-5.9)

Frequent high TA/vegetative flavors in poor years. Consistently "cool climate" varieties.
Chardonnay (5.1); Pinot Noir (5.9); Riesling (3.5); Pinot Meunier (5.9); Vignoles (3.5); Gamay Noir

GROUP D
(MDVH <3.4)

Rarely achieve full maturity except during warm seasons or on choice sites.
Cabernet Sauvignon (3); Merlot (3); Semillon (3); Sauvignon Blanc; Shiraz; Zinfandel

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partially addressed the irregularities cited by the LTI model.[12] In simplest terms, alpha zones mature their fruit when mean temperatures are 9° to 15°C, whereas beta zones mature their fruit when mean temperatures are greater than 16°C (Table III).

The implications from this model are that cool climates are not defined by regions but instead by region and cultivar combinations. Hence, it could be argued that some sites in Bordeaux may be considered cool climate in terms of maturing Cabernet Sauvignon, but not cool climate with respect to Pinot Noir or Chardonnay. Some regions, such as California's Central Valley, are not cool climates for even the latest-maturing cultivars.

The various climatological theories and models have left us with three basic criteria to define a cool climate in terms of winegrape production: 1) Those with mean temperature of the warmest month less than or equal to 20°C; and/or 2) Those with a latitude temperature index less than or equal to 370; and/or 3) Those whose grapes mature when mean temperatures are between 9°C and 15°C.

Table V

A rating of winegrape cultivars by maturity season in the Okanagan Valley, B.C. Canada using the veraison-to-harvest index. (VHI)

GROUP A
(VHI<12)
Bacchus (11); Csabagyonge (12); Schonburger (11); Siegerrebe (12); Ortega (12)

GROUP B
(VHI 13-16)
Auxerrois (16); Chasselas (15); Gewurztraminer (15); Perle (15); Marechal Foch (14)

GROUP C
(VHI 17-30)
Chardonnay (20); Pinot Noir (17); Riesling (29); Pinot Meunier (17); Vignoles (29)

GROUP D
(VHI >31)
Semillon; Merlot; Cabernet Sauvignon; Sauvignon Blanc; Zinfandel

Mean daily degree-days from veraison to harvest

Jackson and Lombard's basic thesis was that a specific region could be a "cool climate" (alpha zone) for some cultivars but a "warm climate" (beta zone) for others.[12] A new, albeit analogous concept to the alpha/beta zone model uses mean daily growing degree days (GDD; base 10°C) from veraison to harvest (MDVH). This model takes into account the heat accumulation during the period when the most immediately significant processes affecting winegrape quality occur: 1) sugar accumulation, 2) acidity reduction, 3) color and flavor development.

The focus on the veraison-to-harvest period is justified by significant correlations between sugar accumulation and titratable acidity (TA) versus days between veraison and harvest,[6] and is further strengthened by significant correlations between °Brix, TA, pH, and potentially-volatile terpenes versus GDD between veraison and harvest.[15]

For our calculations, it was acknowledged that veraison is a phenological process, not an event to which a specific date may be ascribed. For our purposes, veraison (50% softened berries per cluster) occurred at around 10° to 12° Brix. Harvest date was based consistently on British Columbia (BC) maturity standards.[19] Using these dates, four basic cultivar groups were delineated (Table IV).

It is acknowledged that budburst to veraison GDD (always 900 to 1,000 GDD in the Okanagan) can determine wine style by determining the "acid maximum" and the concentration of aroma precursors, but what happens thereafter is of greatest importance.[6]

Characterization of early-season (Group A) cultivars

It was very clear that site and season were very important in determining which cultivars were cool climate in terms of their maturation. Sites near the south Okanagan town of Oliver accumulated more than 1,600 GDD in 1987, while less favorable sites near the north Okanagan city of Kelowna accumulated less than 1,200 GDD. The following year, the relative differences between the sites were the same, but annual GDD accumulation was considerably less. Over the two-year period, the MDVH values of the Oliver and Kelowna sites were 9.3 and 8.1, respectively.

Table VI

Mean GDD, veraison to harvest GDD, and MDVH of several "cool climate" regions. Non-BC data are courtesy of Gladstones[9]

Region	Cultivar	Annual GDD	GDD V—>H	MDVH	VHI
Summerland, BC, (Canada)	Bacchus	1146	268	8.2	12
	Gewurztraminer		201	6.5	15
	Pinot Noir		201	5.9	17
	Riesling		164	3.5	29
Southampton, (England)	Bacchus	850	82	2.7	37
Colmar, Alsace, (France)	Gewurztraminer	1186	201	6.7	15
Portland, (OR, USA)	Pinot Noir	1179	161	5.3	19
Geisenheim, (Hesse, Germany)	Riesling	1042	150	5.0	20
Bordeaux, (France)	Cabernet Sauvignon	1392	250	8.3	12
Griffith, NSW, (Australia)	Muscat Gordo Blanco	1756	270	9.0	11

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In 1988, three of the Kelowna sites had MDVH values of 7 plus or minus 0.6, whereas three of four of the Oliver sites that season had MDVH values approaching 9. Differences in free volatile terpene (FVT) concentration were observed in 1988 (higher FVT for the Kelowna sites), whereas no differences could be observed for the previous season when all MDVH values ranged from 8.1 to 11.4.[17] These data suggest that a MDVH value capable of producing site or season-based differences in free aroma compounds is approximately 7.

Observations for these cultivars and others such as Ortega, grown at the Research Center in Summerland from 1987-95, confirmed our initial observations.[16] MDVH values for Ortega always exceeded 6.4, with a mean of 8.3 and a maximum of 10.5. As a general rule, Group A cultivars in the Okanagan have problems with low °Brix, low TA, and high pH.

In the seasons where MDVH was less than 7, the fruit composition was closest to optimal: °Brix exceeded 20° and titratable acidity was greater than seven g/L (Reynolds, unpubl.). Most favorable pH values tended to occur at low MDVH values.

It was felt that 7.1 MDVH was a reasonable minimum value for defining Group A cultivars in the Okanagan (Table IV). Group A cultivars would produce cool climate-style wines in the Okanagan only occasionally, or perhaps two of six years. Therefore, districts with considerably less veraison-to-harvest GDD are capable of maturing these cultivars successfully.

Characterization of midseason (Group B) cultivars

Typical "Alsatian" cultivars such as Auxerrois, Chasselas, and Gewurztraminer, and those maturing in the same part of the season (Kerner, Muller-Thurgau, Perle, and others) are normally harvested at a point when GDD are still accumulating. Due to this fact, problems of low TA and high pH can occasionally occur. The range of MDVH values for these cultivars at Summerland (1990-94) was 4.2 to 8.8, with means of 6.3 to 6.7 (Table IV).

However, this is a "transition group" in the Okanagan, because these cultivars usually produce cool climate-style wines. In fact, during unusually cool seasons (*e.g.*, 1993), MDVHs were less than 5.0, the value ascribed to Riesling (Group C) in Geisenheim, Germany. Under Okanagan conditions, wines produced from these cultivars would be considered cool climate-style in three of five years. Hence, districts with fewer veraison-to-harvest GDD would be suitable for these cultivars.

Studies with the cultivar Okanagan Riesling (*Vitis labruscana* x) have added further credibility to this hypothesis. This cultivar tends to ripen in the same season as Gewurztraminer and is hence considered in Group B under our criteria. Under 1987 maturation conditions, MDVH was 10.2 (Oliver, south Okanagan) and 8.2 (Summerland, central Okanagan), and the berries accumulated total volatile esters (TVE) concentrations of 27.6 and 11.8 mg/L, respectively.[18]

However, during the following season, MDVH was 5.0 and 5.1 for the two sites, and TVE were less than six mg/L, a concentration below the sensory threshold required to produce labrusca flavor character. However, the wines produced in 1988 were cool climate in style, containing light floral and muscat notes in the aroma, with a crisp, acidic finish. This suggests that a MDVH less than 8 but greater than 5 is the value that determines cool climate-style in wines, independent of region.

Characterization of late season (Group C and D) cultivars

These cultivars consistently are harvested after GDD accumulation ceases. Mean MDVH ranged from a high of 5.9 (Pinot Noir) to 3.5 (Riesling), with maximum MDVH of 7.9 for young Pinot Noir vines in 1990 (Table IV). It must also be pointed out that the Pinot Noir was harvested for sparkling wines, otherwise MDVH would likely be lower due to a prolonged maturation period. In every year, TA exceeded 10 g/L.

In cool seasons such as 1993, these cultivars had MDVH values of 2.5 to 3.3, and full fruit maturity was not obtained; TA exceeded 12 g/L and °Brix for Riesling was less than 20. Cultivars in Group C are considered cool climate in wine style every year. It is unlikely that they could mature successfully in cooler districts unless the best sites are chosen.

Cultivars grown in the Bordeaux region (*i.e.*, Cabernet Sauvignon,

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Figure I
Cool climate region x cultivar combinations. Climatic data are from Gladstones (1992).

REGION A (<1000 GDD)	REGION B (1001-1150)	REGION C (1151-1300)	REGION D (1301-1500)	REGION E (1501-1700)	REGION F (>1700)
England Seattle, WA, USA Victoria, BC, Can. Wadenswil, Switz.	Launceston Pipers Brook, Aust. Reims, France; Freiburg Ger. Geisenheim, Ger. Geneva, Switz. Kelowna, BC, Can. Blenheim, N. Z.	Angers Auxerre, France Colmar, France Dijon, France Eger Zagreb Portand, OR, USA Prosser, WA, USA	Bordeaux, France Lyon, France Siena, Italy Logrono, Italy Coonawarra, Aust. Nuriootpa, Aust. Napier Oliver, BC, Can.	Verona, Italy Dao Plovdiv Napa, CA USA Margaret River, Aust. Barossa Vly, Aust. Clare Vly, Aust. Rutherglen, Aust.	Setubal Funchal Fresno, CA USA Adelaide, Aust. Roseworthy, Aust. Merbein, Aust. Mudgee, Aust. Griffith, Aust.
Csabagyonge	Siegerrebe				
Traminer	Auxerrois	Chasselas			
	Pinot Noir Pinot Gris	Chardonnay Riesling			
		Cabernet Franc Cabernet Sauvignon	Merlot		
			Petit Verdot Zinfandel Shiraz Grenache Muscat Gordo		

Merlot, Semillon) mature at Summerland and similar sites in only the best years. Although reliable data over several seasons are not available for these cultivars, it is estimated that their mean MDVH values are less than 3.4 (Table IV). This suggests that they are not suitable for the area.

However, as with the latitude-temperature index, optimum site selection has provided a welcome irregularity to the model: south Okanagan sites (*e.g.*, Oliver/Osoyoos), like southern slopes in Mosel, are capable of maturing Group D cultivars without problems of high acidity and intense vegetal flavors.

Some unusually hot seasons (*e.g.*, 1987) can also allow normally "cool" site and cultivar combinations (less than 7.0 MDVH) to become "warm" and may render unsuitable cultivar and site combinations suitable (greater than 3.4 MDVH).

Veraison-to-Harvest Index (VHI)

The MDVH values can be converted to whole numbers of increasing magnitude relative to maturity season using the formula VHI = (1/MDVH) x 100 (Table V). Group A cultivars thus have VHI less than 12, while VHI for the later-maturing groups are: Group B (13-16); Group C (17-30); Group D (greater than 30).

Cultivars consistently having a VHI greater than 17 would be considered cool climate in terms of their wine style. Those in the 13 to 16 range have the capacity to produce cool climate-style wines during most seasons in the Okanagan.

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Comparison of the Okanagan and other cool climate regions

Mean annual GDD, veraison to harvest GDD, and MDVH of several cool climate regions were compiled based upon data of J.S. Gladstones.[9] Veraison dates were assumed to be 30 days prior to the mean harvest date provided for each cultivar group. Using this data and applying our criteria, English vineyards will likely produce cool climate-style wines irrespective of cultivar (Table VI).

According to Gladstones' data[9] and our criteria, Colmar, France, is only barely considered a cool climate district for one of its famous cultivars, Gewurztraminer, since MDVH is 6.7 and VHI is 15. It could likewise be argued that Bordeaux is not a cool climate region insofar as maturation of Cabernet Sauvignon and similar cultivars are concerned.

An interesting example of how degree of continentality can affect grape maturation is apparent when comparing Okanagan (cold arid continental) and Geisenheim (cool humid continental) data for Riesling; the MDVH for Geisenheim is much higher, despite approximately 150 less GDD. This helps explain the intensity of Riesling flavor from many German winegrowing districts despite GDD that are theoretically too low to mature this cultivar.

Cool climate cultivar and region combinations

Using Gladstones' data,[9] we can divide the world's grapegrowing regions into six categories based upon mean annual GDD (Fig. 1). These range from those with more than 1,000 GDD, such as southern England and the Puget Sound region in the Pacific Northwest of North America, to the hottest areas of Portugal, California, and Australia.

By interpolating our criteria by calculating MDVH and VHI for principal cultivars grown in each district, a pattern emerges as to which region and cultivar combinations produce cool climate wines. Some latitude has been granted to certain combinations such as Bordeaux and Class D cultivars [*e.g.*, Cabernet Sauvignon (MDVH is 8)], and Oliver, BC, and Class B cultivars [*e.g.*, Gewurztraminer (MDVH is 8)], owing to the fact that cool climate-style wines can be produced within these regions on some sites during some vintages. Region E and Region F have a low probability of producing cool climate-style wines from any cultivar based on our criteria and Gladstones' data.

It is important to note that the inability of a region to produce a cool climate-style wine from a given cultivar class does not suggest that such cultivars are inappropriate for the region. It may, as in the example of Muscat Gordo Blanco in Regions E and F in Australia, merely dictate the most appropriate style of wine that can be produced — in this case, dessert wines.

Similarly, districts whose MDVH is

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Table VII

MDVH classes for some promising new grape cultivars recently tested in the Okanagan Valley, B.C. Canada.

GROUP A
Kozma Palne Muscotaly; Zefir; Zengoe; Blauer Fruhburgunder; Juwel; Gm 6497-4

GROUP B
Agria; Bianca; Regent; Ezerfurtue; Ehrenfelser; Nobling

GROUP C
Helfensteiner; Heroldrebe; Zweigeltrebe; Kozma CsVT 55; Kozma CsVT 525; Rieslaner; Badacsony 10; Fontanara; Cantaro; Gm 676-2; Gm 7116-26; Gm 7117-10; Faberrebe; Holder

6 to 7 will experience seasons when only cool climate-style wines are produced, and others (warm seasons) when late harvest-style wines are made. Such is the case for Group B cultivars Gewurztraminer and Pinot Gris in Alsace, and for Ehrenfelser and Kerner (Group B) grown under similar maturation conditions in the Oliver district in BC.

This phenomenon was observed by K.F. Helm and B. Cambourne,[10] who indicated that, in the Canberra district (mean annual GDD 1,400), "average" years (10 of 25 years) were suitable for those cultivars normally grown in the Bordeaux district, while the "best" years (six of 25 years) allowed full maturity in Shiraz.

Cooler seasons (nine of 25 years) did not allow Shiraz or the Bordeaux cultivars to mature sufficiently, but were considered great years for cultivars such as Riesling and Gewurztraminer. The mean annual GDD in these great years for Gewurztraminer ranged from 1,069 to 1,157, with estimated MDVH around 5.7.

New cultivars for cool climate areas

Cultivar evaluations done in the Okanagan[1,2,3] and on Vancouver Island[20] have widened our choice of cultivars suitable for cool climate districts (Table VII). Many notable new

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cultivars and selections from Hungarian and German breeding programs have the potential to diversify the variety profile in many parts of Europe and the New World.

Early-maturing red wine cultivars are in high demand. Blauer Fruhburgunder (Group A); Agria and Regent (Group B); and Helfensteiner, Heroldrebe, Kozma CsVT 55, Kozma CsVT 525, and Zweigeltrebe (Group C) are among many red winegrape cultivars worth consideration.

Many non-traditional white winegrape cultivars other than those cited by H. Becker[4] and D.I. Jackson and D.F. Schuster[13] are appropriate for cool climate districts. Among these are Hungarian muscats Kozma Palne Muscotaly, Zefir, and Zengoe, and German selections Juwel and Gm 6497-4 (all Group A); Bianca, Ezerfurtue, Ehrenfelser, and Nobling (Group B); and Rieslaner, Badacsony 10, Fontanara, Cantaro, Faberrebe, and Holder (Group C).

Conclusions

Choice of cultivars for cool climate districts must be based on an accurate understanding of what a cool climate is in viticultural terms. I propose that the prior definitions be modified, such that genotype and environment interactions be considered.

Hence, the modified criteria for a cool climate are: 1) Those districts with a MTWM less than 20°C; and/or 2) Those districts with a LTI less than 370; and/or 3) Those districts whose grapes mature when mean temperatures are between 9° and 15°C; and/or 4) Those districts whose MDVH for any given grape cultivar is less than 7; and/or 5) Those districts whose principal cultivars have VHI greater than 17.

Using these criteria, districts with less than 1,000 GDD are cool climates for all cultivars capable of maturity, districts accumulating 1,001 to 1,500 GDD are cool climates for some cultivars but not others, and districts accumulating more than 1,501 GDD cannot be considered cool climates for any grape cultivar. ■

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SAVVY MARKETING

"Winelicious" Cuisine Cellars

Something new in the market

By Carol Caldwell-Ewart

Captured in mid-stride, the god Mercury dashes quickly across every Cuisine Cellars front label. With one hand, he lifts a glass of wine; in the other, he grasps an overflowing grocery bag. Bringing together food and wine is the basis for this new wine brand, launched in 1996 by Brand Partners, LLC, Windsor, CA.

Cuisine Cellars offers four wines: Lighthearted White, Rich White, Lighthearted Red, and Rich Red. The back label of each bottle features a recipe created and chosen to match well with the wine. At the grocery store, the label serves as a shopping list for a harried customer who wants an enjoyable meal in a hurry. At home, the consumer can soak off and save the label to use the recipe again.

Bruce Rector, president of Brand Partners and one of its winemakers, was a former general partner and chief enologist at Glen Ellen Winery (Glen Ellen, CA). Rector says the inspiration for Cuisine Cellars came one day at Safeway. "I saw a woman in the wine aisle with a look of total bewilderment and pain on her face. I said to myself: 'I have to do something to help this woman. The wine industry can't allow our customers to have this expression on their faces.'"

Rector believes, this woman's bewilderment and pain came from having so many choices, but no explanation from the wine's makers to help her understand the wine or how to match it with food.

"We want to use wine labels to speak to people in a way they've never been spoken to before, a way that will be much more helpful to them," he explains.

Rector and his partners have created a system to make the most out of Monday through Friday meals. The wines are aimed at new wine drinkers they call UTPPs (pronounced U-tips: Urban Time-Pressed Professionals). Rector adds that, by giving consumers healthy meals they can prepare quickly and match easily with wine, the partners hope their customers will have more time to spend with their families. "If you open a bottle of wine with dinner, it lasts long enough to create a conversation. Without it, people eat and run."

Cuisine Cellars wines are non-vintage, non-varietal wines that are blended to go well with food and sell for $4.99.

Wine as a food product

"Everything on the Cuisine Cellars label treats the wine as a food product," says Ruth Steiner Larson, Cuisine Cellars vice president. "It tells how many servings of the wine there are, and how long it will last in the refrigerator once it's been opened." Larson spearheaded the effort to develop recipes, performed the nutritional analysis, and now helps sell the wines to grocers and frequently demonstrates the wines and recipes at supermarkets.

Each bottle of the first 5,000 cases of Cuisine Cellars carries one of 16 recipes — four for each wine. The recipes fall into three categories, "No-Prep," "30 Min. or Less Prep," and "At Your Leisure," to help the shopper select the right recipe for the time at hand.

Fat content, calorie count, and serving sizes are all given, and the label invites consumers to submit original, healthy, low-fat or no-fat recipes to be featured in upcoming bottlings. A drawing of the recipe's creator is included on the label, too.

The recipes

"No-Prep recipes are no-brainers," Larson explains, like Mushroom Boboli® Pizza, which stars deli-marinated mushrooms and non-fat sour cream. With only five ingredients and 15 minutes of cooking time, the pizza is ready quickly. The recipes also suggest the rest of the meal; the under 30-minute recipe called Scallop-Penne, for example, is a low-fat recipe that the label suggests serving with toasted baguette slices, a simple lettuce salad, and fresh fruit for dessert. At Your Leisure recipes, such as Vege Party

Lasagna, take 60 minutes or more to prepare.

In every category there's a vegetarian recipe for each wine and ethnic dishes as well. "These aren't complicated recipes, they suit middle America's taste," she adds.

Larson uses brand names in the recipes as a way to market to grocery stores. "Grocery stores will jump on Cuisine Cellars," she says, "because this concept helps the stores sell products." Brand Partners offers chain stores that buy a truckload quantity (1,232 cases) the opportunity to have their proprietary food brands featured.

Winemaking challenges

Cuisine Cellars winemakers Rector and Matt Praetzel face some interesting challenges as they blend quality wines. They must make wines the winery can afford to sell for $4.99 and that appeal to palates new to wine drinking.

Rector says the answer to blending affordable wines is in knowing how to shop. "You have to have the experience in the industry to know how to source the wines, and you have to be willing to use grapes from all over California."

Rich White is a blend of central coast Pinot Blanc and Napa Valley Sauvignon Blanc and Chenin Blanc, for example. Other wines are blended with grapes sourced in Sonoma County, San Luis Obispo, Monterey, and elsewhere.

When he's buying grapes or wine, Rector says he's looking for the right answer in three categories: Is this an interesting flavor; does it fit within the boundaries of price; and will it cause a repeat purchase?

"Overall, what the consumer wants is quality," he explains, "but I have to exceed the customer's expectations relative to my competitive cluster (as defined by price). If I'm really good, then I meet the quality expectations of the wine in the competitive cluster above me."

No-Prep

SOAK & SAVE RECIPE!

#1

PIZZA IN A PINCH

Enjoy with Cuisine Cellars Lighthearted White

In the twilight hours, when I'd rather be working in the garden instead of the kitchen, this is a quick and tasty dish I can put together in a pinch

1 (16 oz.) Boboli® shell, original crust
4 oz. Canadian bacon, sliced
1 (4 oz.) can pineapple chunks, drained
2 Tbsp. dried chives
½ of an 8 oz. pkg. shredded fat-free mozzarella cheese

First I turn the oven to 400°, and then I turn to this delightful Cuisine Cellars Lighthearted White. Pouring myself a small glass, I smell its aroma and imagine a seasonal bouquet of flowers on the table. "Snap out of it," I tell myself – "You need to make pizza." So I drizzle the pineapple over the entire pizza shell, chop the Canadian bacon into stamp-sized squares and layer half of it atop the pineapple. Next I sprinkle with cheese, chives and the other half of the bacon. Pop the pizza into the oven and bake for 12-15 minutes until the crust browns. Remove and let cool for a couple of minutes, then slice into 8 pieces. Now I can smell the flowers again.

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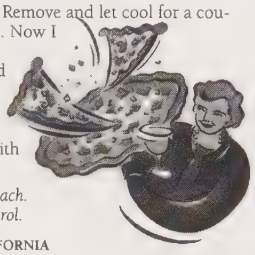
Serve with a salad of pre-washed greens, croutons and non-fat raspberry vinaigrette dressing. Complete this delightful dinner with a bowl of frozen vanilla non-fat yogurt topped with S&W® freestone peaches.

Recipe makes 4 servings of 475 calories each. 21% calories from fat and 35 mg cholesterol.

NANCY PRAETZEL, KENTFIELD, CALIFORNIA



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Creating wines for unsophisticated palates, Rector says, "makes me pay more attention to the tactile and less to the aroma. If I were in a $15 price category, I'd say 'Hey, if you're buying at $15, you expect the wine to bite back.' Here, I'm much more concerned with how the wine feels than with how it smells. Does it beckon you to swallow it, rather than to think about whether you like it or not."

Cuisine Cellars has chosen to produce blends rather than varietals because of the flexibility blending gives the winemakers as they create the wines. "We are matching to different recipe categories (spicy, hearty, sweet, lite), and you can't necessarily pick a varietal and get the right wine for the recipe," Rector explains. "By making a blend, we can pick what we want to achieve the right balance with the food category."

The winery shares the Associated Vintners Group facility for winemaking, bottling, and storage in Graton, CA.

Innovative packaging

Packaging the wines presented challenges, too. Chief among them was finding a glue that would hold the label on through shipping, refrigeration, and even submersion in an ice bucket, but one that could be soaked off in warm water without tearing or falling apart.

After extensive research, Praetzel found the glue. "Behind the brand was the idea that we wanted to add value to the wines for the retailer and the consumer." The soak-off label is an important component of adding extra value for the consumer.

"The challenge was to match the label, the machine, and the glue that would be most compatible," Praetzel says. "Our goal was to make it as easy as possible for the consumer to take advantage of what we're offering."

It's been years since anyone in the wine industry was willing to accept a label that would soak off in water, so Praetzel tested 12 glues used outside the industry, considering a wide range of factors and variables. He looked at issues related to paper, coatings, tackiness, viscosity, weather issues (humidity), the label size, the Mustang in-line labeler to be used, and the type of glue.

The choice came down to starch-based glues, and finally to API 1453, a glue produced by Adhesive Products Inc. in Albany, CA. The labels were printed on 70lb. cast-coated Mirrorkote by Gordon Graphics, Novato, CA.

Marketing the new wines

Cuisine Cellars targets its wine to grocery stores and is currently sold at 30 grocery stores in Sonoma County and the San Francisco Bay Area. The partners are focusing their marketing efforts on grocers in the Bay Area first, then in Northern California, then Southern California, the Pacific Northwest, and finally Colorado, Texas, and Arizona.

The winery has done no advertising on its own, but the wines have been featured in weekly advertising by several stores. "The stores are doing our advertising for us," says Larson. She and other Brand partners have also been demonstrating the wine and food matches at the stores. The stores have contributed to the demonstrations by having their delis prepare the food from the Cuisine Cellars recipes.

After four months of sales, in October of 1996, the wines were selling at about 550 cases per month, and sales were increasing about 100 cases per month, Rector reports.

Measuring success

Rector says he will measure Brand Partners' success with two yardsticks; one is financial, and the other is imitation. He hopes Cuisine Cellars will become a leader in creating new eating habits that bring together food and wine. "We think we are the only California wine company that is going out and bringing new wine drinkers to the joys of everyday wine drinking."

The partners believe that the strength of Cuisine Cellars is in its strong potential tie-ins with food companies, and, concludes Rector, "I think people will enjoy the refreshing change of looking at wine functionally rather than egotistically. We hope people will value that, if not, we'll reinvent ourselves." ■

Taste

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Pinot Blanc demands consumer attention

by Eleanor & Ray Heald

Pinot Blanc lacks marketplace image, yet, when vinified similarly, it has style characteristics comparable to Chardonnay. Therefore Pinot Blanc has potential as an "Alternative Beyond Chardonnay," say several California vintners who produce the overlooked varietal.

Pinot Blanc has rarely had a clearly separate identity. In Burgundy near the end of the 19th century, Pinot Blanc was discovered as a mutation of Pinot Gris, itself a mutation of Pinot Noir. French ampelographer Pierre Galet confirms that because they look so similar, no distinction was made between Pinot Blanc and Chardonnay plantings in Burgundy for many decades. While Chardonnay dominates the vineyards of the best white Burgundies, Pinot Blanc is allowed by law in such wines as those labeled Bourgogne Blanc and Mâcon. Galet also indicates that Pinot Blanc of Alsace is not "true" Pinot Blanc, but rather Pinot Blanc gros, more vigorous than "true" Pinot Blanc.

In France's Burgundy region, Pinot Blanc is not varietally labeled. Only lesser Burgundy appellation Chardonnay is varietally labeled to appeal to the U.S. market. The best white Burgundies will always carry appellation and domaine. In Alsace, it's Pinot Blanc. In Italy, it's Pinot Bianco.

Complicating the issue further is the fact that California's older vineyards of Pinot Blanc are most probably Melon. Do most consumers know that Muscadet from France's Loire Valley is Melon [de Bourgogne] and does it matter? Jancis Robinson, in *The Oxford Companion to Wine*, (Oxford University Press, New York, 1994) confirms "that no great distinction has been noticed between the wines from the true Pinot Blanc and Melon adds further weight to the thesis that Melon is a Burgundian variety."

PWV asked several California producers of wine labeled Pinot Blanc to participate in this exclusive varietal review. They share the opinion that after cellar techniques are employed, there is no significant difference among wines made from what they call "California" Pinot Blanc or from Melon or from certified Pinot Blanc.

What's more, in most cases, they're not sure which of the grapes is the basis for their wines. Based on a comparison of vine photographs taken at Bien Nacido Vineyard of Pinot Blanc vines, placed side-by-side with Melon, Jon Priest maintains that the jury is still out

FEATURED WINEMAKERS:

Richard L. Arrowood, winemaster and **Michel Berthoud**, winemaker
Arrowood Winery
Glen Ellen, CA

Joe Benziger and Terry Nolan, winemakers
Benziger Family Winery
Glen Ellen, CA

Ken Brown, winemaker
Byron Vineyard & Winery
Santa Maria, CA

Michael Michaud, winemaker
Chalone Vineyard
Soledad, CA

Steve Pessagno, winemaker
Lockwood Vineyard
Salinas, CA

Christian Roguenant, winemaker
Maison Deutz,
Arroyo Grande, CA

Tom Stutz, winemaker
Mirassou Vineyards
San Jose, CA

Christina Benz, winemaker
Murphy-Goode
Geyserville, CA

Philip Zorn, winemaker
Paraiso Springs Vineyards
Soledad, CA

Ken Volk, owner and **Jon Priest**, winemaker
Wild Horse Winery
Templeton, CA

"A grower once said to me Pinot Blanc is to Chardonnay what Merlot is to Cabernet Sauvignon, the kinder, gentler version, and I agree."

Christina Benz

on the identity of the varietal at Wild Horse. Based solely on how the vine matures, he concludes that what goes into the Wild Horse bottling is probably Melon.

"There is very little true Pinot Blanc planted in the central coast of California," Ken Volk adds. "The majority of the Pinot Blanc plantings were made by growers who thought they were planting Pinot Blanc when they bought Pinot Blanc material from their nurseries. The nurseries thought they were growing Pinot Blanc since they had purchased their original plant material as certified Pinot Blanc from California's Foundation Plant Material Service (FPMS).

"The discovery that FPMS had misidentified Melon to be Pinot Blanc was made by Paul Truel of the National Agricultural Institute Vineyard in France while traveling in Australia to identify and classify vines growing there. Truel found 'Pinot Blanc' vines sent to Australia by FPMS to be the variety Melon. In 1980, Truel traveled to U.C. Davis, only to discover that the FPMS 'Pinot Blanc' mother vines were actually Melon, a grape grown in the Muscadet region in France.

"At no time was there an intention to deceive the public as to what was being grown as Pinot Blanc in California. It was the domino effect of the misidentification of the varietal by FPMS. To be politically correct, there is only California Pinot Blanc."

Wild Horse Pinot Blanc has been sourced from the San Bernabe Vineyard in Monterey County since 1994.

The Pinot Blanc that has been bottled at Benziger is thought to be Melon. Part of the Benziger identity problem has been solved since that vineyard source was ripped out, and Terry Nolan says that the new source for future bottlings will probably be Bien Nacido.

Mirassou's Tom Stutz has made no attempt to identify the vines there. "One would assume that it is Melon, and I question the importance of knowing this," he comments.

Vine characteristics

Michael Michaud explains Chalone's plantings, one from 1946 and the other from 1972, both of which he says are now believed to be Melon. "We used to think that the older plantings were not," he maintains. "There's significant variation among the vine leaves with an occasional odd naked sinus similar to Chardonnay, but that doesn't make it Chardonnay either." Chalone also has large-clustered Pinot Blanc gros obtained from Italy, which Michaud says has a different growth habit, but in many stages prior to harvest, it's difficult to distinguish this vine from Melon. The Pinot Blanc leaf is rounder, greener and "cobwebby" on top. The Melon leaf is more angular, more yellow and not "cobwebby."

Vine age makes a big difference when wine from Chalone's 1946 plantings is tasted in comparison with wines from the newer vines, notes Michaud. The older planting (St. George rootstock) is in very shallow (six to 12 inches) topsoil above six to eight feet of solid limestone. Vines spread their roots along the top of the rock unless they find a fracture. The younger planting, about 1.5 miles north, has some limestone streaks, but not nearly the amount in the 1946 vineyard.

The old vines are head-trained, 303 vines/acre, while the newer are cordon-trained, 6x10 feet, 726 vines/acre. Historically, the old vines were never irrigated, but they have been since 1985; the younger (planted 1992-94) vines have always been irrigated, but not enough in the early years. "In my opinion, those are the contributing factors to the difference in taste noted," Michaud contends.

Murphy-Goode vineyards were planted in 1980 from a Rutherford vineyard selection rather than a nursery. "We call it uncertified California Pinot Blanc," Christina Benz reports.

Arrowood Winery sources Pinot Blanc from Saralee's Vineyard in the Russian River Valley planted in 1990. According to grower Saralee Kunde, this is true Pinot Blanc from registered cuttings, clones 5 and 6, obtained through FPMS UC-Davis from Rauschedo, Italy. The soil is sandy

Photo by Ken Volk

Certified Pinot Blanc looks similar to upright growing clones of Pinot Noir, "Pinot droit." Early in the growing season, when cane length is 12 to 24 inches in length, apical leaves of Pinot Blanc have a near white tint due to the large number of white hairs growing on Pinot Blanc shoot tips. Pinot Blanc also has extremely long tendrils at this stage of growth. In contrast, at this stage of growth, Melon (California Pinot Blanc) has short tendrils, no white hairs, and a distinct yellowish leaf pigmentation. The growth of Melon tends to be more drooping and downward than Pinot Blanc.

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loam with vines on both AXR-1 and St. George rootstock, spaced 8x12 on a four-foot open-U trellis. The vines are crop thinned to yield to between 4 and 4.5 tons/acre.

Dick Arrowood states that when grapes are harvested from Saralee's Vineyard they are all morphologically similar. "Tiny bunches, small berries and if they were red, they'd be Pinot Noir," he affirms. "They look just like it and totally different from the Melon de Bourgogne that I worked with for so many years when I made wine at Chateau St. Jean. But when either of these are cellar enhanced as a wine, one has great difficulty sorting them out. They are very similar.

"We go into great detail on the back label trying to tell people what the wine is, but I think you can take the Alsace clonal selections, the Italian Pinot Bianco or Melon de Bourgogne and make wine out of them and their similarities are more marked than their differences. This is what we should be stressing."

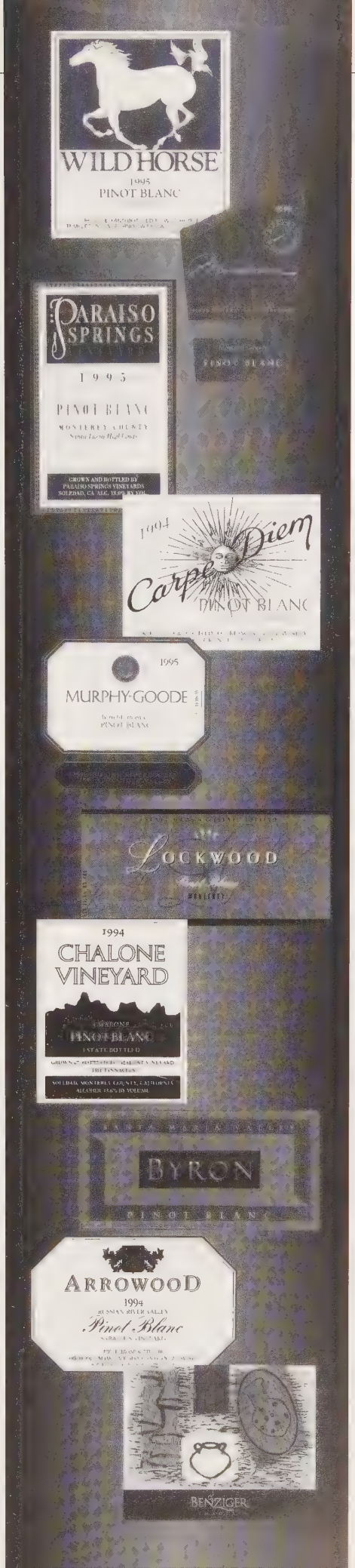
Steve Pessagno describes the Lockwood fruit sourced from a 15-year-old vineyard in Monterey County as also having small clusters with small berries. The vines, growing in shaley loam, are cordon-spur pruned.

Ken Brown of Byron in the Santa Maria Valley, identifies Byron's vines as "real" Pinot Blanc clone 159 from the O'Connor Vineyard near Salem, OR. Twenty-five-year-old Gamay roots were grafted to Pinot Blanc in 1991. Crop yields from cordon-pruned vines with vertical trellis and movable catch wires, which Brown believes control vigor, are two to three tons/acre. Cover crop is also used to keep yields in the desired range.

At Paraiso Springs in the Santa Lucia Highlands of Monterey County, Merlot vines planted in 1973 in deep sandy loam soil, were grafted to Pinot Blanc budwood selected from Cobblestone Vineyard in 1980. Cobblestone vines were purchased from Wente Bros. and Mirassou nurseries in 1974. Vines are spur-pruned with kicker canes and yield about four to five tons per acre.

Flavors and phenolics

"Compared to Chardonnay, Pinot Blanc is more neutral and toned down," Benz states. "A grower once said to me



Pinot Blanc is to Chardonnay what Merlot is to Cabernet Sauvignon, the kinder, gentler version, and I agree."

Priest has noticed that over-handling of Pinot Blanc at Wild Horse can result in subduing the subtler, more delicate characters. "We like to interject a Burgundian influence to make the wine more interesting, but too much new oak can overwhelm the fruit and mineral elements," notes Priest.

Arrowood agrees Pinot Blanc has many similarities to Chardonnay. But Pinot Blanc has more weight, depth, and textural mouthfeel. He's also pleased with its longevity. "It has outlasted many of the Chardonnays I made in the same year."

"Very tannic skins," comments Stutz. "The phenolic concentration contributes to the flavor profile." He notes that in some of Mirassou's Pinot Blanc blocks, sugars run to 20.5° Brix and stop. The pH is 3.0 to 3.05 with TA at 0.65, but the grapes benefit from additional hang time. In other blocks, getting 24° Brix is not a problem, and the wine is much richer.

Michaud considers this a function of Pinot Blanc's higher tannins. "My experience has been that without adding SO_2 at the crusher, Pinot Blanc juice turns an evil brown color," he reports. "But it falls out with settling. If one checks lab records from the mid-1970s, SO_2 was added at the crusher, and eight to nine lbs/1,000 gal of bentonite were used for heat stability. But now, without SO_2 addition at the crusher because of the desire to have malolactic fermentation (MLF) complete, only three to four lbs/1,000 gal bentonite are required. (MLF has somehow reduced the protein instability.)"

Invariably in Pinot Blanc, more than any other white varietal, there are pinking problems after pressing, notes Volk. "We almost always add PVPP to counteract this," he says. "We are uncertain about the cause of pinking, but believe it is encouraged by the often amber to bronzed skins of late-picked grapes, the gross aeration of the juice at pressing, and our not using SO_2 until MLF is complete."

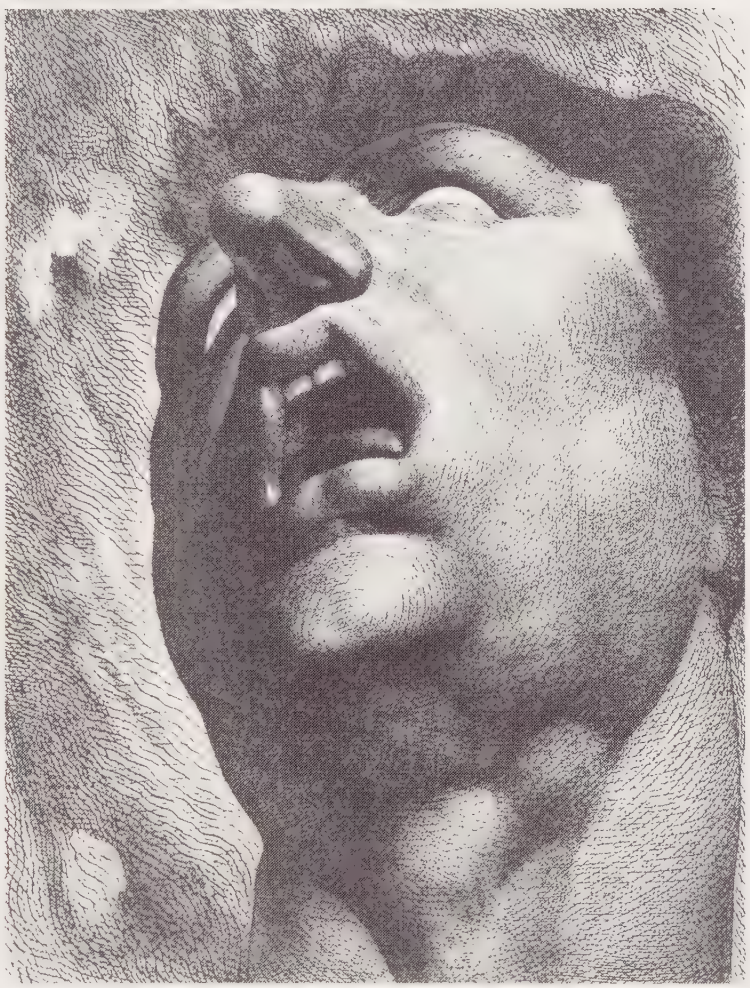
Michaud believes that vines reflect their growing conditions. Those at Chalone are unique with mineral components, elevation, and temperature swings of some 50° to 60°F in a day. In

the past under inadequate irrigation, Chalone grapes have manifested some of the underripe character Stutz mentioned. "Pinot Blanc fruit still does not have the pH and acid structure of Chardonnay, but it's a lot better than it used to be," he comments. "I've experienced some root beer-like characters in a young wine, but afterwards, it tends more toward apple, pear, and tangerine along with accents of the vineyard mineral character."

Arrowood stresses that "it depends on how the fruit is treated and how it is enologically embellished. I have a problem using the word delicate for a Pinot Blanc descriptor. It can be, but it doesn't necessarily have to be."

Nolan agrees and says that the Benziger choice is a more powerful style, "to go way over the top."

Head of a Damned Soul in Dante's Inferno by William Blake dated 1789



The flames of Dante's inferno may have flavored the wine he drank. In ancient Rome, some wine makers stored vessels in smoke-filled rooms. The heat from a smoldering fire stimulated the aging process, while the smoke imparted flavor. A couple thousand years later, French coopers perfected the fire toasting of oak barrels. We at StaVin continue this time-honored technique with choice French and American oak, toasted at four different levels. Over the years, we've seen and tasted fire's effect on a few clear Chardonnays and hearty Merlots. To hear more about our traditionally toasted staves and cubes, please write us at the address below, or telephone (415) 331-7849.

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Vineyards and harvest maturity

Because plantings are 1975 or earlier, the majority of central coast Pinot Blanc is own-rooted. "There's some debate whether one sees more varietal character in fruit from vines on their own roots or from vines with rootstock," Volk points out. "I happen to agree that there's greater fruit intensity, particularly aromatically, when the vine is own-rooted."

At Chalone, fruit is planted on St. George, 110R and 99R, but because the vineyard gets so much sun, elaborate canopy management is unnecessary. "The vine is less mildew-prone than Chardonnay," Volk adds.

Benz comments that the Murphy-Goode site is vigorous, but that Pinot Blanc is the least vigorous of white varietals planted.

Preferring gold to amber fruit at ripeness, leaves tend to be pulled on the morning side of vines supplying fruit to the winemakers interviewed.

All participants agree that final picking decisions are based on tasting fruit. In the flavor profile, distinct banana, achieved somewhere between 23° and 24° Brix is common. Other maturity judgments are made on seed maturity. It takes about three weeks for seeds to become totally lignified.

Benz reports that in the last few years, some fruit for Murphy-Goode has been sourced from the Russian River Valley, a cooler region than Alexander Valley. She maintains that Russian River grapes are much fruitier and more concentrated. Nolan experiences the same scenario from a Sonoma Mountain site. "In cooler locations, spice accents and some of the peachiness of Chardonnay appear in the fruit when it's mature."

Barrel fermentation

At Benziger, barrel rooms are refrigerated to 50°F, and cold barrel fermentation, similar to that for Chardonnay, is done. Fermentation is monitored, and when it starts to cool or the drop in Brix starts to slow, barrels are moved to a room at 65°F. Under this regime, primary fermentation completes in 21 days.

Stutz explains the two different Mirassou wine styles. For the lighter style, labeled White Burgundy, tank fermentation is inoculated with Epernay 2 yeast, and there is no malo-

lactic fermentation (MLF). The wine labeled Pinot Blanc is considered a "reserve" style, barrel-fermented with 100% MLF, but without lees ageing.

Arrowood commits to French oak for style, but Stutz likes a mix of American and French oak barrels. Stutz barrel-ferments in American oak and pulls it out at the end of primary fermentation, allowing wine to go through MLF in tank. Wine is then racked back into French oak for ageing.

The Murphy-Goode style avoids MLF, but Benz says that she has shifted from full barrel fermentation on all lots to one-third tank fermentation, then barreling this portion on fine Pinot Blanc lees. Barrels are sourced from a half-dozen American and three or four French oak coopers.

PWV thanks Murphy-Goode Winery for hosting the tasting/discussion of Pinot Blanc.

Production Focus

Below, winemakers discuss individual style and preferred cellar techniques employed to attain their preferred style.

Arrowood Winery

Glen Ellen, CA
Richard L. Arrowood, winemaster
Michel Berthoud, winemaker

Style

Arrowood says Pinot Blanc has more weight and body than most Chardonnays, while retaining abundant fruit. Achieving the fruitiness of Chardonnay, but with greater mid-palate stuffing, is a primary aim.

Winemaking

Juice is settled 48 to 72 hours at 35° to 40°F and inoculated in tank with Prise de Mousse ADY. Transfer to 35% to 40% new French oak is made within 24 to 36 hours. Maximum temperature for a 10- to 14-day fermentation is 68°F.

To create softer, more buttery components together with greater stability through less processing, inoculation with MCW ML bacteria is made midway through alcoholic fermentation. For richness and greater complexity, wine ages on light lees, stirred weekly, for eight to nine months.

Once MLF completes, the first SO_2 addition of 30 to 35ppm (not to exceed 60 to 70ppm total at bottling) is made. No barrel rackings are done, but free SO_2 levels are maintained at 20ppm.

Prior to bottling in July or August following harvest, wine is fined with isinglass and racked in two to three weeks. A rough DE filtration follows. Wine is bottled as 100% varietal and released in eight months.

Benziger Family Winery

Glen Ellen, CA
Joe Benziger and Terry Nolan, winemakers

Style

Believing that too much of everything is almost enough, a big, rich, over-the-top style with 100% MLF, significant new oak, and extended lees ageing is the Benziger style goal.

Winemaking

Juice settled for 48 to 72 hours at 48°F is inoculated in tank with Epernay 2 ADY and transferred immediately to 50% new American oak barrels. Maximum temperature is 62°F during a 21-day fermentation.

To improve mouthfeel and texture, while adding greater depth and increased complexity, inoculation with MCW and Vino Flora ML strains is made at 0° Brix.

Ageing on yeast lees extends eight months with stirring every few days early on and then monthly in the latter stages.

When MLF completes, the first SO_2 addition of 28ppm is made. In barrel, free SO_2 is maintained at 23 to 30ppm, but wine is not racked. Occasionally and prior to cold stabilization, blending is made with 2% to 5% Chardonnay to improve mouthfeel and reduce astringency.

Before bottling in the August past harvest, wine is bentonite-fined and racked in two to three weeks. It is pad-filtered to sterile membrane at bottling and released six months after bottling.

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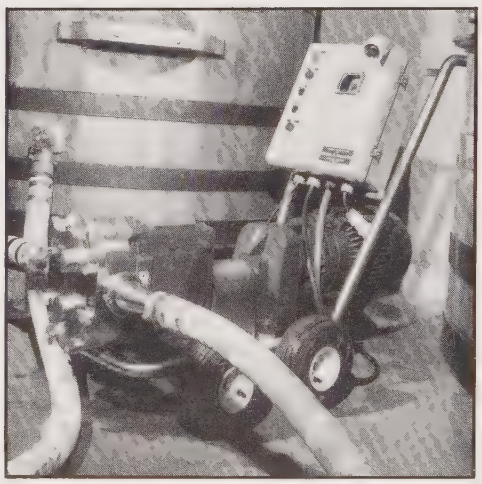

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Byron Vineyard & Winery

Santa Maria, CA
Ken Brown, winemaker

Style

Brown seeks a Burgundian-style, rich, fragrant wine with correct acid balance. He showcases honey, melon, and pear aromas, coupled with hints of vanilla and cinnamon. Lush, full flavors are accented by toasty French oak supported by a smooth, silky texture.

Winemaking

To reduce phenolics, whole clusters are pressed and juice is settled 12 to 24 hours at 55°F. In 1994, wine was transferred to barrel and inoculated 50/50 with Montrachet and Lalvin CY3079 ADY. For 1995, fermentation was uninoculated with great success producing wine of greater complexity and richness.

Juice for the 1996 Pinot Blanc pressed out at 23.4° Brix with 0.68 TA and 3.34 pH. The acid was lower and pH higher than normal, so Zymaflore VL-1 yeast was used due to its competitive factor to help avoid MLF since the juice numbers were in the ideal finished wine goal.

Cooperage for barrel fermentation and ageing is 20% new French oak, with the balance two to three years old. Maximum temperature during a seven- to 15-day fermentation is 70°F.

Inoculation with MCW ML bacteria has been done at the end of primary fermentation to add complexity without overpowering intense fruit character. Ageing on gross lees, with weekly stirring, extends six to 10 months to add texture while keeping the wine fresh.

At the end of MLF, a first SO_2 addition of 35ppm is made. Free SO_2 is maintained in barrel at 20ppm. A racking is made to tank for fining with low-fat milk and at times isinglass and racked again in two weeks.

Prior to bottling in June or August post-harvest, wine is clarified using a pressure leaf filter. After bottling, it is released in three months.

Chalone Vineyard

Soledad, CA
Michael Michaud, winemaker

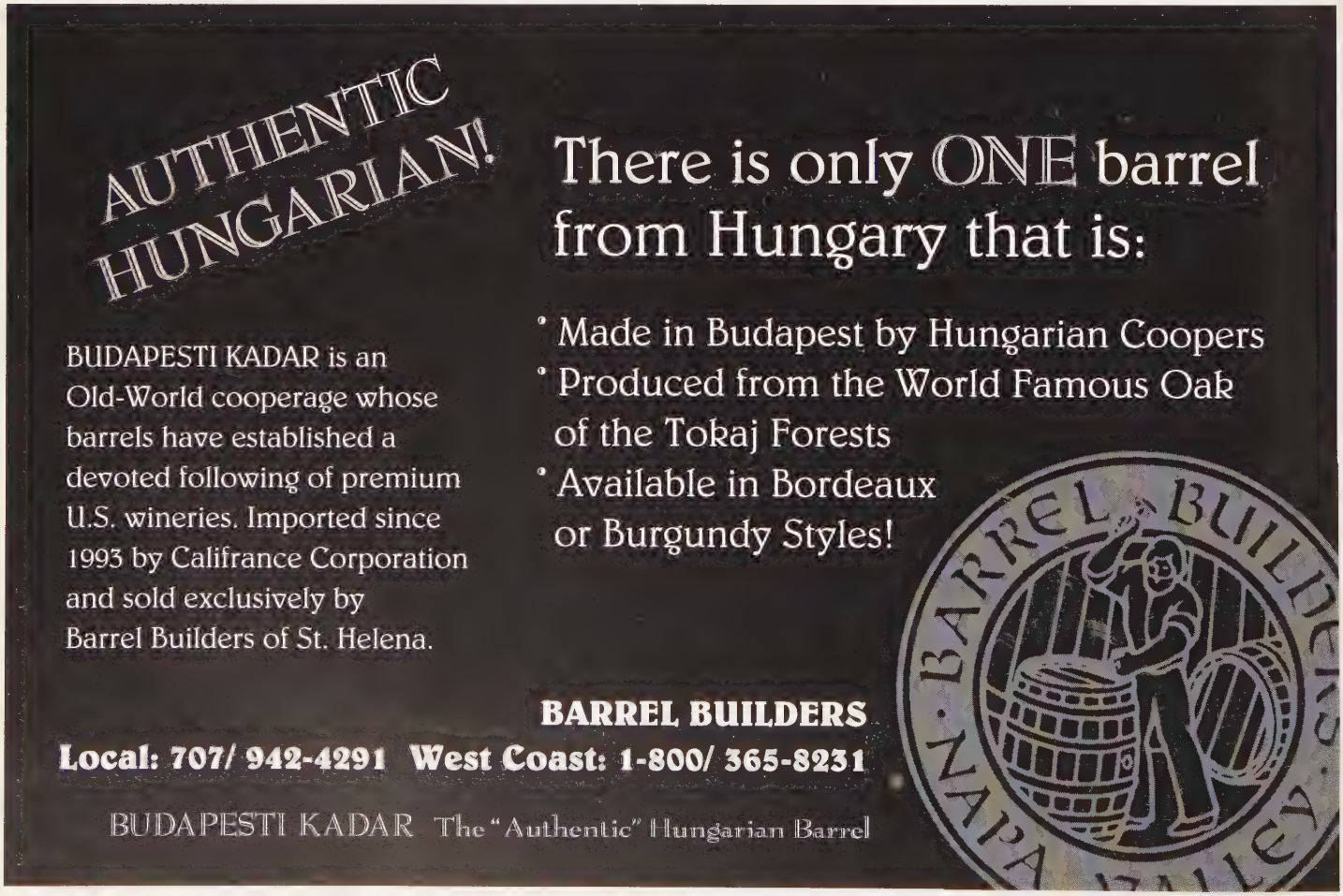
Style

Michaud believes this fruit naturally lends itself to an ageworthy Burgundian-style wine that is big-structured with a finely-textured mouthfeel. It is characterized by tangerine and pear fruit along with clean mineral notes.

To accomplish this, in 1994 Chalone began to do whole cluster pressing to reduce phenolics (90% in 1994 and 100% in 1995 and 1996), and conduct native yeast fermentation (30% in 1994 and 1995, and 100% in 1996).

Winemaking

Juice is barreled one day after pressing. Uninoculated barrel fermentation in one-third new and one-year-old French oak reaches a peak 65°F temperature and completes in 15 to 45 days. At dryness, wine is inoculated with MCW ML bacteria to obtain a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Wine is aged on gross lees for four to eight months with stirring two to three times each week. After the first racking between February and April, the first SO_2 addition at 60ppm is made, and free SO_2 is monitored at 20 to 30ppm.

After racking wine to tank, bentonite is added for heat stability and fining. Racked again in one month, wine is then SEK pad filtered and sterile filtered into bottle in June or July after harvest. Release is in six to 10 months.

Lockwood Vineyard

Salinas, CA
Steve Pessagno, winemaker

Style

Pessagno emphasizes varietal fruit character, soft mouthfeel, and a moderate oak level.

Winemaking

Juice settled 48 hours at 45°F is inoculated in barrel with Epernay 2 ADY.

French cooperage is 35% new with the balance averaging 2.5 years. Fermentation completes in about 35 days peaking at 68°F. To prevent MLF, wine receives a first SO_2 addition of 0.8 molecular at dryness.

To attain richness, wine is aged on gross lees for eight months and racked in May after harvest. During barrel ageing, free SO_2 levels are maintained at 0.5 to 0.8 molecular, based on pH.

Pre-bottling in June, wine is fined with gelatin and racked in seven to 10 days. Before bottling, it receives one pass through 577 DE. Bottled wine is released in two months.

Maison Deutz

Arroyo Grande, CA
Christian Roguenant, winemaker

Style

Christian Roguenant's style goal is a full-bodied, low-acid, dry wine with flavors of melon, apricot, pear, and citrus hints.

Winemaking

Whole clusters are pressed. Juice is settled 48 hours at 45°F, then inoculated in barrel with M2, Lalvin CY3079 and Montrachet ADY.

A mix of French and American oak, averaging two years old with 35% new is used. A 20-day fermentation reaches a maximum 75°F temperature. MLF is spontaneous, and once it completes, 32ppm SO_2 is added and maintained at that level as free SO_2.

Wine is aged on gross lees, stirred weekly, for nine months. Before bottling in August after harvest, wine is fined with isinglass and bentonite and racked in three weeks. Release is three months post-bottling.

Mirassou Vineyards

San Jose, CA
Tom Stutz, winemaker

Style

The goal for Mirassou's reserve-style Pinot Blanc is an extremely rich, full wine with dominant malolactic and oak components coupled with very ripe pear flavors and good length. It is marketed as an exciting alternative to Chardonnay.

Winemaking

Mechanically harvested fruit is 100% whole cluster field-pressed. Once in the winery (at 55° to 60°F), it is inoculated in tank immediately with Epernay 2 ADY. After a drop of 1° to 2° Brix, one-half is transferred to 50% new American oak barrels. Fermentation completes in seven to 15 days reaching a maximum temperature of 65°F.

At 0.5° Brix, transfer from barrel to tank is made, and X-3 is used as the ML inoculum to add fullness and buttery components. Once MLF completes, wine is racked, and an SO_2 addition of 20 to 25ppm is made. Wine is returned to a mix of 20% new American and French oak cooperage for six to nine months where free SO_2 level is kept at 25ppm.

Wine is racked from ageing barrels to tank and treated with bentonite and racked off the fining agent in one to two months. Before an August bottling, wine is 0.65μ filtered and passed through a 0.8μ membrane on the bottling line. Release is in four to six months.

Murphy-Goode

Geyserville, CA
Christina Benz, winemaker

Style

Murphy-Goode Pinot Blanc shows upfront fruit and finishes with toasty oak and balanced acid toward the broad side of the palate to best express creaminess and silky texture.

Winemaking

Machine-harvested grapes are pressed, and juice is settled 48 hours at 50°F. Inoculation with Prise de Mousse ADY in tank is made immediately after racking off juice lees.

Fermentation of one-third of the lot completes in tank with the remainder in a mix of 34% new French and American oak. The tank-fermented fraction completes fermentation at 55°F in approximately 15 days. The barrel portion takes seven to 10 days with a peak temperature of 70°F to complete. At dryness, a first SO_2 addition of 60ppm is made.

To create a creamy texture, the barrel-fermented wine is aged on gross lees, stirred every three weeks, for five months. In barrel, free SO_2 levels are maintained at 10ppm, and barrels are topped with Chardonnay contributing about 10% to the blend.

Prior to bottling in early May, a blend of the tank-fermented portion (further aged in barrel on Pinot Blanc lees) and the barrel fraction are bentonite-fined, then filtered off the fining agent with DE, and bottled through sterile pads. Release is in two to three months.

Paraiso Springs Vineyards

Soledad, CA
Philip Zorn, winemaker

Style

In this wine style, the Paraiso Springs highlights fruit with a light touch of oak.

Winemaking

Mechanically harvested grapes are field-pressed. Once in the winery at 55°F, juice in tank is inoculated within 48 hours. At 20° Brix, must is transferred to 25% new American oak bar-

rels. Fermentation completes in eight to ten days with peak temperature of 65°F.

MLF, which in addition to softening acid, adds butterscotch flavor and a creamy, full body occurs spontaneously. Once MLF completes, an addition of SO_2 to 25 ppm is made.

Wine ages on gross lees for two months and fine lees for two months and is stirred once per month. Free SO_2 levels are maintained at 20 to 25ppm in barrel.

Before bottling in March, wine is DE-filtered and given a pad filtration. It is intended to be released in about six months but sales have resulted in earlier release in 1994 and 1995.

Wild Horse Winery

Templeton, CA
Ken Volk, owner, and
Jon Priest, winemaker

Style

Wild Horse Pinot Blanc is a balanced wine made using Burgundian winemaking techniques with expressive fruit framed by French oak barrel fermentation and lees ageing. Striving to produce an enjoyable and approachable wine is their goal.

Winemaking

Grapes are hand-picked at 23° to 25° Brix and transported to the winery in half-ton bins in a refrigerated truck. Grapes are whole-cluster pressed. The juice is adjusted to a pH of 3.3 to 3.4 by addition of tartaric acid and sometimes fined with PVPP prior to cold settling for 24 to 72 hours at 40°F. Fermentation is initiated after racking off juice less with Lalvin FDY, either Montrachet or CY 3077 strains. The free ammonia is adjusted with addition of DAP up to 150 ppm, if necessary.

Around 20° Brix, the must is barreled in 60% to 90% new French oak barrels. Alcoholic fermentation usually completes in 14 to 28 days with temperature peaking at 80°F or below.

Prior to bottling, the wine is racked from barrels to a cold stabilizing tank and fined with bentonite for heat stability and possibly with isinglass, potassium caseinate or PVPP. After cold stability is confirmed, the wine is cold filtered with D.E. through a pressure-leaf filter, SO_2-adjusted, and membrane-filtered on the bottling line in February or March after harvest and released in six months. ■

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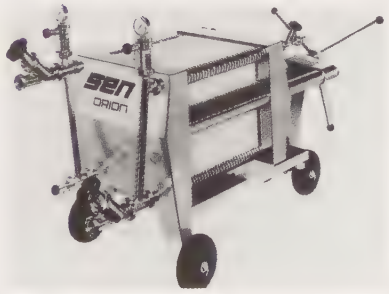

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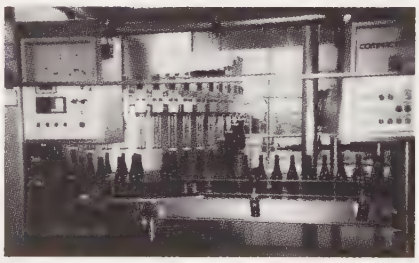
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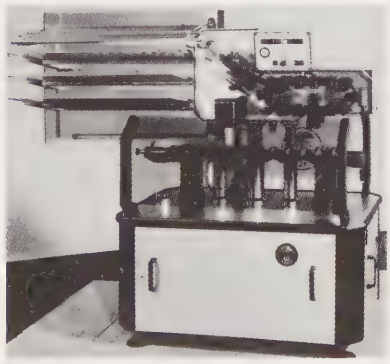
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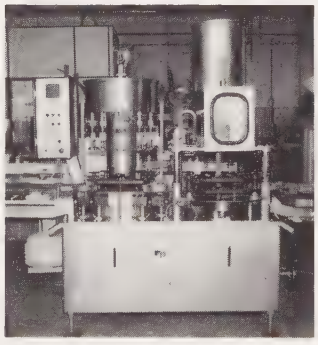
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Varietal Review
March/April PWV

Pinot Blanc makes Unique food matches

by Eleanor & Ray Heald

What better place to seek out food harmonies for Pinot Blanc than a restaurant of the same name? At Pinot Blanc in St. Helena, CA, owner/master chef Joachim Splichal and Sean Knight, executive chef of the Napa Valley property, offer unique insights on the wine and its food harmonies.

Splichal trained at some of Europe's most prestigious establishments and perfected his culinary talents in France, specifically as chef saucier at the Michelin three-star La Bonne Auberge in Antibes. He specializes in classic French cuisine, but using California's bountiful garden resources, he has tempered and lightened his preparations.

In 1989, Splichal inaugurated Patina restaurant in Los Angeles. He has opened six others on either a Patina or Pinot concept. The Pinot theme evolved because of Splichal's personal fondness for Pinot Blanc, Pinot Gris, and Pinot Noir. In 1995, he was inducted into the James Beard Foundation *Who's Who of Food & Beverage in America* and was named "Best California Chef" by them in 1991. In 1995, he published *Patina Cookbook: Spuds, Truffles and Wild Gnocchi* with text by Charles Perry, Collins Publishers, San Francisco.

"Pinot Blanc is a better food wine than Chardonnay," Splichal comments. "It does not overpower food as many Chardonnays can. It's easier to make a perfect balance between food and Pinot Blanc than food and Chardonnay."

"Why aren't many people drinking Pinot Blanc?" asks Splichal. Knight responds, "It's a marketing thing. Most wineries are pushing their Chardonnay. We welcome a wine like Pinot Blanc because it's so much easier to match with food."

"Pinot Blanc is neglected on almost all U.S. wine lists," Splichal continues. "We're trying to do something about that and are offering several by the bottle and one by-the-glass to spur interest. We offered several Pinot Blancs by-the-glass when we opened in 1996 but removed them because they were not revolving quickly enough. We're making progress, but slowly.

"When on the dinner menu, one of my favorite matches with California Pinot Blanc, or as I call them 'Pinot Blanc strangers' from Alsace, is Ahi Tuna Tower (see recipe below) with avocado, plum tomato, and yellow bell pepper."

Splichal makes his matches based on what he calls a "feeling of balance" between the wine and food in the mouth. He believes that the textural match of ahi tuna and Pinot Blanc is special. The recipe has a citrus vinaigrette and some soya, which harmonize with the barrel fermentation and barrel ageing elements of most of these wines. A slight saltiness is also an enhancement.

For similar textural reasons, he also recommends Roast Loin of Rabbit with a creamy polenta. "If you make polenta on the soft side and add some cheese, it matches with just about any wine," he contends. "But the trick in the match with Pinot Blanc is to put some balsamic vinegar in the rabbit sauce. It changes the acidity and adds a sweet fruit note similar to that perceived in the wine, although the wine is perfectly dry."

Knight comments that the "melt in your mouth" character of white meat and a preparation such as the rabbit are complementary to all white wines with barrel-influenced elements. The wine's natural fruit sweetness comes forward and any oaky or woody perception gets incorporated with the food in the same way a spice added to food works.

Risotto is a Knight favorite with fruity styles of Pinot Blanc. One of the restaurant's occasional pasta specialties is Asparagus Risotto with Red and Yellow Pear Tomato Compote. "Now, I know Joachim thinks that asparagus is too rough for Pinot Blanc," he challenges. "But that's where we differ sometimes, and we can take into consideration different perceptions people have."

Splichal concedes the asparagus dish will match if the Risotto is cooked with Pinot Blanc. The tomatoes work the same acid-fruit balancing act as plum tomatoes do in the tuna recipe. "But there is something that I will always argue," he adds. "Artichokes don't work. People have all kinds of explanations for the why and why not of artichokes. I just say, they don't work."

Splichal explains his philosophy in preparing a new dish. "When I have a new idea, I don't test it in advance. I serve it as a menu special. I know it will taste good even if it doesn't satisfy my expectations. Then I try to improve it. If it hasn't turned out right after three attempts, I give up on it."

Scallop Roll is Knight's favorite match (see recipe below). "In the preparation, the brown butter on its own and nuttiness from the brown butter takes to the fruit and barrel elements of Pinot Blanc," he maintains. "Tomato dice in the recipe gives needed balance between sweetness and acidity.

"It's for this very reason, my personal preference is Chalone Vineyard Pinot Blanc. It's always rounder than others and the acid balance is right on. In my mind, when I think Pinot Blanc and food, I think Chalone style and food, so we have to be careful that our remarks are accepted as good base-line, broad perspectives."

The oak perception and acidity level in one Pinot Blanc are different than in another, agrees Knight, adding that his remarks are more or less general until a chef fine-tunes a recipe to match a specific wine. Generally, he says, shellfish

with almost any preparation will work well with Pinot Blanc.

Knight also likes Chilean sea bass, especially if it has a lot of roasted flavorful vegetables, including powerful examples such as fennel. Using delicate herbs such as tarragon, basil, chervil, peppercress, or chives, as accents when roasting vegetables picks up the fruit tones in Pinot Blancs. He cautions against rosemary or fresh thyme because they're too strong.

Knight suggests curries and Chinese spices, soya, lemongrass, and even a light touch of fresh ginger. Corriander Ahi Tuna with Chinese Broccoli and Curried Carrot Broth is a perfect example of a dish on the restaurant's winter menu that uses these flavors.

Both chefs agree that Pinot Blanc is light and clean and can match well with spicy, even hot and spicy dishes, such as Thai food. However, this is not Splichal's style of cooking, neither is it the style of the executive chefs he chooses for his restaurants. ■

Two recipes discussed by Splichal and Knight follow.

Ahi Tuna Tower

(serves four)

For plum tomato mousse:

1½ cups peeled and seeded ripe plum tomatoes (about seven tomatoes)
2 tablespoons extra virgin olive oil
Salt and freshly ground white pepper

In a food processor fitted with a metal blade or in a blender, process the tomatoes until very smooth. Place the puréed tomatoes in a strainer lined with slightly dampened cheesecloth over a bowl. Cover the strainer loosely with plastic wrap and allow purée to drain overnight in the refrigerator. In a small mixing bowl, stir together tomato mousse with the olive oil, salt and pepper to taste, and blend well. Set aside, covered, until ready to assemble the dish.

For Ahi towers:

6 oz top-quality ahi tuna, cut into ¼-inch dice
1 tablespoon finely chopped chives
1 medium shallot, finely chopped
1 cup peeled and seeded plum tomatoes, cut into ½-inch cubes (about 4 tomatoes)
Salt and freshly ground white pepper
½ large avocado, cut into ¼-inch dice
1 yellow pepper, roasted, peeled, seeded and diced

In a small bowl, combine the tuna, chives, and shallots and toss to mix well. Place eight 1½-inch tall, three-inch diameter molds or cans (open at each end) on a baking sheet which has been lined with parchment paper. Divide the ingredients equally between all eight molds, by layering the inside of the molds in the following order, pressing down gently but firmly as you go with the back of a teaspoon or your fingers, a teaspoon of tomato cubes, salt and pepper to taste, avocado, tuna, yellow pepper, tomato, avocado, tuna. Finish with a final layer of the yellow pepper.

Assembly:

Two 3-inch pieces scallion, white part only, thinly sliced on the diagonal
1½ Tablespoons extra virgin olive oil

Using a flat-ended metal spatula, carefully slide the spatula between the parchment paper and bottom of the molds and lift two towers onto each of four large, chilled appetizer plates. Spoon a little tomato mousse onto each plate opposite the ahi towers.

Carefully ease the molds up and away, while holding the towers down with two fingers or the back of a teaspoon. Sprinkle the scallion rings around the edges of the tomato mousse and drizzle with a little oil.

Scallop Roll

(serves six)

For potatoes:

¼ cup unsalted butter, melted
Salt and freshly ground white pepper

One large or two medium Idaho potatoes, peeled and trimmed flat on one long edge to form a beginning surface for slicing.

Preheat oven to 350°F. Line a baking dish with parchment paper. Brush it with some of the butter, then sprinkle with a little salt and pepper. With a mandoline or sharp knife, cut the potatoes carefully lengthwise into ⅛-inch thick oval slices and arrange them in a single layer on the baking sheet (you will need 12 slices). Brush the potatoes well with the butter and sprinkle with a little more salt and pepper. Cover with another sheet of parchment paper and bake the potato slices for 10 to 12 minutes or until just tender. Set aside until cool enough to handle.

For scallop rolls:

1 cup loosely packed spinach leaves, skins removed
12 large sea scallops (about 1½ oz each)
Salt and freshly ground white pepper
1 medium shallot finely chopped

Cooking:

1 teaspoon clarified butter

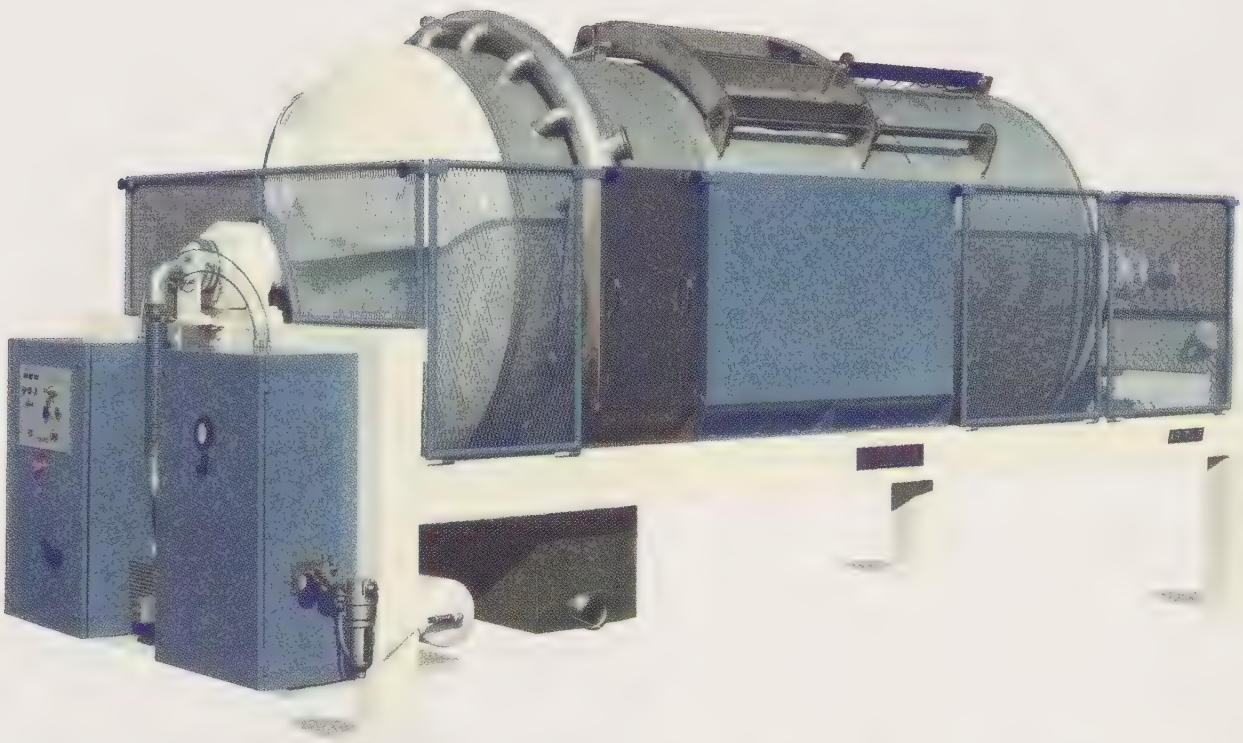
Have all ingredients for the sauce ready before cooking scallop rolls. Remove plastic wrap from scallop rolls and place them carefully near the stove. Heat a large nonstick skillet over medium heat. Add butter and when it is very hot, sauté the rolls for about two minutes, until they are crisp and golden, turning gently with kitchen tongs to brown all sides evenly. Keep the rolls warm in a low oven while quickly finishing the sauce.

Sauce:

⅓ cup unsalted butter, for first step of the sauce
2 tablespoons balsamic vinegar
½ cup unsalted butter at room temperature, cut into three pieces, for finishing the sauce
Salt and freshly ground black pepper
3 plum tomatoes, peeled, seeded and diced, for garnish
2 medium shallots, finely chopped, for garnish
1 small bunch of chives, cut into 2-inch lengths, for garnish

In a small sauté pan, melt ⅓ cup butter over medium-high heat. Watching carefully, swirl butter until it turns golden brown, then add balsamic vinegar, standing back as it will splatter. Reduce heat, swirl in remaining three pieces of butter, stirring and swirling until the sauce is just thickened and emulsified. Immediately remove from heat and season to taste with salt and pepper. Transfer a scallop roll to each of the six heated appetizer plates and spoon a little of the sauce over the top. Garnish edge of the plate with diced tomatoes, shallots, and chives. ■

PEAK.



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ENSURING *Quality* in CORKS from PORTUGAL

by Mike Miller

Growers, manufacturers, processors, and suppliers of natural oak bark in Portugal are increasing efforts to produce corks that ensure a tight, lasting, untainted seal.

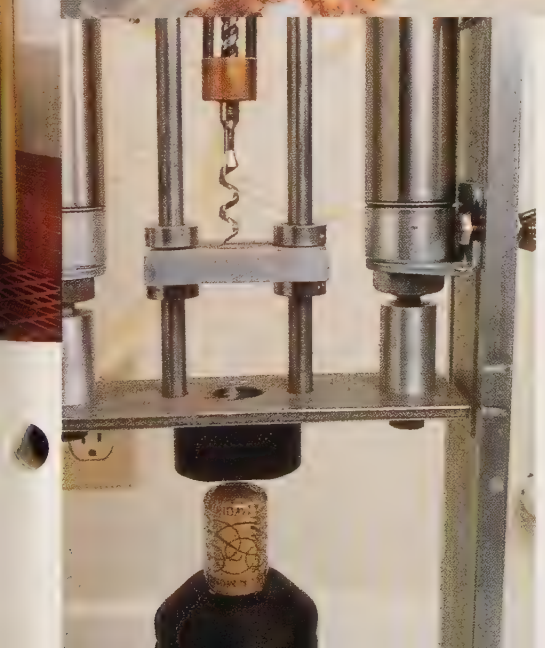
Providing high quality corks, however, is no easy task. A natural product typically harvested every nine years from the *Quercus suber* oak trees of central Portugal, cork bark is subject to a host of complications. For suppliers in Portugal, the world's largest cork growing and processing region, the quality objective has led to a critique of existing programs and introduction of technological innovations.

Responding to the growing demand for quality cork, especially in the U.S. and Australia, suppliers have taken a greater role to ensure that all possible steps are taken to eradicate common quality problems such as taint, worm holes, and green wood.

Cork growers

In the forest, it is no longer enough simply to harvest on a nine-year cycle. Portuguese cork growers are improving the forest environment to facilitate growth of quality cork bark. Removing grass around the base of the trees destroys natural habitats for destructive

PHOTOS FROM TOP TO BOTTOM: Ensuring cork quality begins in the forest (Top-Left) where weeds that may host damaging insects are cleared. Corks are punched (Top-Right) and washed (Bottom-Left) in computer-monitored baths before preliminary inspection (Center). At Global Cork in Portugal, sensory (Right) and physical tests (Bottom-Right) ensure cork quality before export.



insects that burrow into the tree bark and form holes that can lead to leaking wine corks. Trees are pruned and thinned to promote healthy, upright growth that provides clean and straight bark.

Growers are also improving harvest practices. Some growers delay harvest for an additional one or two years, which allows for the development of thicker bark that yields a higher percentage of wood suitable for wine cork production. Increased wood percentage means a reduction in the level of critical defects.

Sources of taint (2,4,6-Trichloroanisole or TCA or other taints) have been connected to the forests, prompting growers to rethink the age-old tradition of drying cork on the forest floor and to experiment with improved drying methods, such as storing cork bark planks on plastic pallets to avoid ground contact.

Preparadores

Once harvested, nearly all cork is sold to *preparadores*, who sort the slabs of cork bark according to quality, reserving the top 15% to 20% for the wine cork industry and selling the remainder for a broad spectrum of industrial uses. In addition to sorting the cork, *preparadores* boil all raw cork bark to kill harmful molds and reduce tannin levels. The molds, however, can and do grow back, so processors must keep the wood dry throughout processing. This raw material is then sold to individual cork factories or to cooperatives that resell the cork to smaller "home" producers who punch cork for resale.

Preparadores have been identified as a possible source for contamination and taint. Pressure is being exerted on these middlemen to ensure that their operations are run cleanly — that boiling water is changed regularly and cork is dried and stored properly. Partly as a result of improvements by *preparadores*, taint rates have dropped from the 6% to 8% levels of a decade ago to present levels of approximately 1%.

Factories — the final process

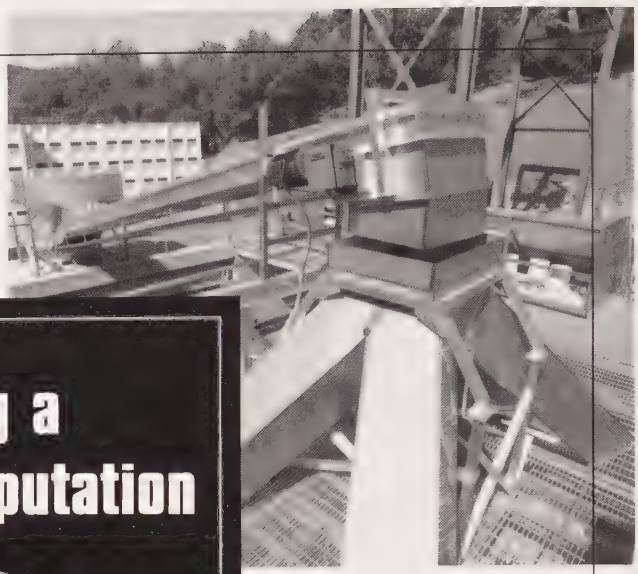
Though the efforts of growers and *preparadores* are critical, most responsibility for quality lies with the cork manufacturer. Whether a large facility employing dozens of workers and producing millions of corks or a small independent, family-owned operation, the Portuguese cork factory holds responsibility for reboiling, punching, and washing the cork, and most important, for conducting countless cork quality sorts, checks, and examinations.

Because factories re-boil and store the cork, issues of taint arise once more. Here again an emphasis on clean water and storage conditions is being stressed to overcome taint problems that have plagued the industry in the past.

One focal point for quality issues related to taint is washing and bleaching of the corks. Traditionally, all corks were washed in baths of chlorine and oxalic acid. Studies by CTCOR (the Portuguese cork industry's research arm), however, have shown that the traditional method of controlling the chlorine concentration in these baths may have facilitated development of TCA. Most factories have installed computerized equipment to consistently maintain the ideal chlorine level and/or have introduced hydrogen peroxide washes. The hydrogen peroxide wash provides a deeper, more thorough cleaning than the lighter, more cosmetic wash provided by traditional chlorine washes.

Despite these precautions, elimination of TCA remains an overriding concern for the cork industry. The widespread presence of this compound in air and water make it impossible to completely eradicate. Since chlorine is known to be a potential contributor to TCA, peroxide washes, while not a cure-all, are widely seen as a better alternative to traditional chlorine washes.

While cork is still primarily punched by hand, machinery is being introduced and playing an increasing role in routine dimension and quality checks. Ultimately, however, the factory's largest payroll is attached to the sorting tables where many women are employed. Their visual checks (often complemented or replaced by machines) sort out defects such as



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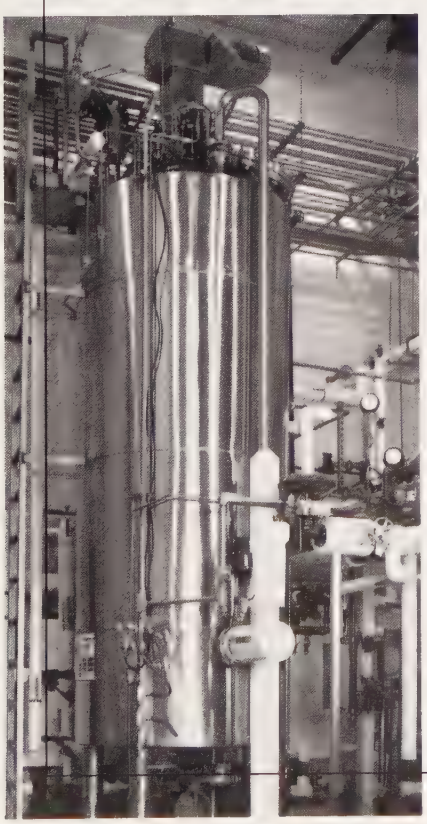

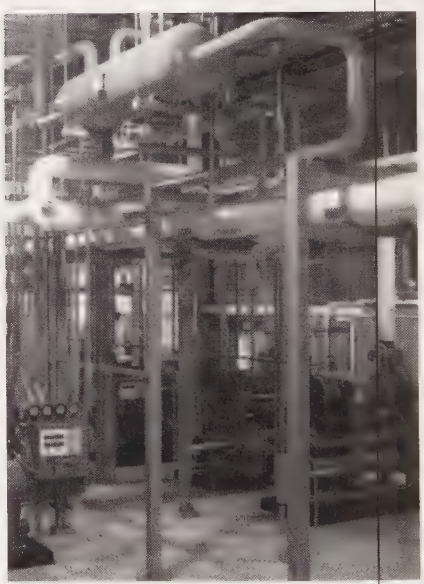

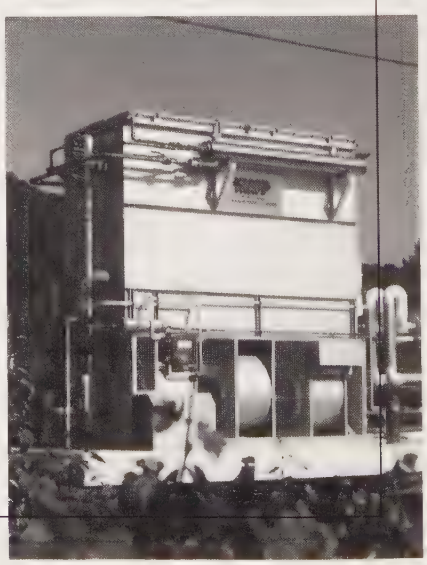

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cracks, worm holes, green wood, bark fragments, and size problems. In most cases, these women are the last check on cork quality before the product is sold and shipped out of Portugal.

Industry structure influences quality

Appreciating the efforts to ensure cork quality requires some understanding of the cork industry. While the number of growers and *preparadores* is relatively small, the number of factories is immense. Concentrated in the cork-producing region surrounding the city of Oporto are more than 600 factories — ranging greatly in size. Most of these are small "mom-and-pop" businesses operating out of garages, punching cork; which is then resold to larger manufacturers. The majority of exported cork, however, is produced by about 20 larger factories.

Since most of these factories are located in a collection of towns close to each other, the industry tends to be close-knit. It is not uncommon for brothers and cousins to compete against each other for the same business, and competition is fierce. The very number of factories and the expense of holding inventory fuel an aggressive fight to sell the punched corks as quickly as possible, but at a price high enough to pay the *preparadores'* costs and still make a profit.

Finished cork from the factories is primarily marketed in three ways. First, most large factories sell their product directly ***through*** importers. This gives the factory control over quality and supply, but may also mean that their sales are driven by production. They generally have exclusive agreements with one importer in each country, or they distribute their own cork, taking on the responsibility to sell what the factory makes rather than offering what the market wants.

Second, a network of agents is also active in the region. They buy directly from different factories on behalf of their clients, who are the importers in the U.S., Australia, Europe, and other markets. This system allows the agent's clients to tailor all purchases exclusively to their needs. However, in many cases, agents simultaneously represent both the interests of their client and the factory. In these instances, the agent is not only working to procure cork that meets his client's needs, but he may also be retained by a factory to sell its production. This can lead to a division of loyalties and conflicts of interest.

Finally, an importer may purchase cork from a number of factories and then sell that cork to a wide range of wineries. Since there are no alliances with a particular factory and no profit motivation to buy from any given manufacturer, in this system the supplier can avoid conflicts of interest and focus on quality and value. However, the independent nature of this system can make the task of procuring cork a greater challenge for the importer.

The industry is further complicated

GLOBAL CORK INSPECTION PROCEDURES

All cork purchased by Cork Supply USA must first undergo and pass the following tests conducted by Global Cork in Portugal.

Sensory test: Samples are pulled from the lot using a detailed sampling plan. Individual corks are soaked in 100ml flasks of neutral white wine for 24 hours. After 24 hours, the wine is transferred into glasses and sniffed to determine acceptability of final sensory properties. The test is designed to reject lots with excessive levels of TCA or taint, and if a lot fails this sensory evaluation, the lot is permanently rejected.

Visual quality: The remaining corks are evaluated for wood quality and categorized as Extra, Superior, 1, 2, 3, or 4. In addition to the cork by cork evaluation, a random sample from the lot is compared to established reference samples to determine acceptability. Corks not meeting the standards for specific qualities are rejected and must be reselected by the processors. After reselection, samples are again pulled by Global Cork. There is no limit to the number of times a lot may be rejected.

Residual oxidants: To detect the presence of oxidants on the cork's surface, Global Cork agitates corks in a solution of potassium iodide and acetic acid. If residual oxidants are present, the solution will turn a distinct violet color. The test is a pass/fail for residual oxidants and lots with any traces are permanently rejected.

Moisture test: That corks meet moisture specifications is paramount for controlling microbial activity during transit, and lots with unacceptably high (above 8%) moisture levels are rejected for reprocessing until they meet acceptable levels (5.5% to 8.0% moisture). To measure moisture levels, Global Cork utilizes a DC-2011 moisture meter.

Physical characteristics: Length, diameter, and weight are evaluated for conformity to specifications. Diameter is measured at two points which are perpendicular to each other. The final diameter value is an average of those two readings. By performing diameter analysis in this fashion, ovality (roundness of the cork) information is available. There is a +/- 1mm tolerance for length. From the sampling of each lot, if more than 5% of corks are not within the acceptance range for diameter and/or if more than 10% are not within acceptance range for length, the lot is rejected.

Additionally, length, diameter, and weight values are used to determine cork density. The cork weight is divided by the volume after volume is determined using the calculation: $\pi r^2 \times$ length.

When corks arrive in the U.S., each of these tests (with the exception of physical characteristics) is again performed by quality control lab technicians at Cork Supply USA. Additionally, after cork has been treated with a coating of paraffin and silicone, Cork Supply USA conducts several treatment evaluations including dust, capillary, carousel, extraction force, microbiological, and sensory tests. ■

by thousands of miles that separate the U.S. wine market from Portugal. Given that distance, buyers can unknowingly purchase Portuguese cork that does not meet the quality demands of U.S. wine producers. Dealing with these complications, as well as a different language and a foreign business culture, is a challenge.

Shaking up the structure to ensure quality

One American cork supplier has overcome the complexities of this industry structure to ensure reliable, impartial quality examinations of all cork before it leaves Portugal.

Cork Supply USA (CSU), a Benicia, California-based provider of wine cork stoppers, has supplied cork to the U.S. wine industry since 1981. Raised in Portugal and apprenticed in the cork industry, owner Jochen Michalski experienced first-hand many of the complications and difficulties cork suppliers face in their efforts to meet American winemakers' demanding quality standards.

For years, Michalski relied on his personal association with cork factory owners to ensure a consistent, reliable source of quality cork. Despite his personal relationships and stringent quality control methods, he received an occasional poor cork shipment. Returning low quality shipments to Portugal was an expensive venture that not only jeopardized important supplier relationships, but also left CSU in a short supply situation. Accepting the corks, however, meant absorbing the cost of selling poor quality cork purchased at a premium price.

Faced with this conflict, CSU in 1991 created a quality assurance laboratory in Portugal: Global Cork. While several cork factories have quality control labs to examine their own production, Global Cork was established to operate entirely independent of production quotas and cost issues.

Given complete autonomy, Global Cork's exclusive charter is to ensure that every cork lot purchased by Cork Supply passes the company's quality standards. To ensure that level of independence, Global Cork holds absolute authority to refuse a lot if it fails any of the company's quality tests.

Global Cork provides a quality funnel through which cork shipments must pass before being exported. This places yet another layer of tests and examinations on Portuguese corks and offers the cork industry a model for insuring quality shipments.

To manage the fledgling experiment, Michalski hired Isabel Allegro, whose reputation as Seagram-Portugal's independent and uncompromising cork quality director had attracted his attention.

"When Global Cork started, I wanted to be able to offer CSU more than the same visual tests that are common in the industry," explains Allegro. "Now, every lot that we sample is not only visually inspected, but also undergoes a sensory examination to detect cork taint or 'off' aromas." Today, the lab examines shipments representing more than 250 million corks annually.

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Pass or Fail

Uninvolved in purchasing decisions, Global Cork steps into action once CSU concludes negotiations to purchase cork from a supplier. When an order is placed, the factory is informed that all purchases are contingent upon the approval of Global Cork. To protect its impartiality, Global Cork receives a copy of the order with the pricing information removed. Upon preparing the order, the factory contacts Allegro's staff, who, within 24 hours, will collect a sample based on the U.S. military standardized sampling system.

At the factory, a Global Cork employee randomly pulls a representative sample from the prepared order, systematically selecting corks from the top, middle, and bottom of each sampled bale. That sample (twice the Military Standard) undergoes a series of sensory and visual tests. For example, the sensory test for a 510,000-cork lot would require 39 individual corks from the 13 separate bales. One hundred corks from this sample are individually placed in 100ml flasks with wine and allowed to soak for 24 hours. The wine is then examined for any taint or mold odors. If the sample lot does not pass this test, the entire lot being offered for sale is refused. No additional tests will be conducted.

"All testing stops if the cork sample does not pass our taint test," declares Allegro. "No amount of resorting can eliminate taint, and we will not take any chances. What the factory does with that cork is their business, but it won't end up with a Cork Supply customer."

While the sensory test is being conducted, a portion (100 corks from a lot of less than 200,000, 150 corks from a lot of 201,000 to 500,000, 200 corks from a lot of 501,000 to 700,000, and 350 corks from a lot greater than 700,000) of the sample undergoes a battery of visual quality tests. Every defect is scored, and the lot is compared against a control sample lot for the quality of cork being purchased. To speed up the tedious task, electronic measuring devices tied directly to computer evaluation forms are used to ensure an exact measure of dimensions, weight, density, ovality, and moisture levels. Ultimately, however, it is the trained human eye that determines if the sample meets Global Cork's quality expectations.

Most cork fails

"Based on our records, most of the cork we evaluate fails. This is usually due to physical defects including nonconforming moisture levels and quality not meeting our standards," Allegro reports. "The factory then must resort the product and submit it for a second or even third evaluation where all the same quality tests will again be conducted."

When a lot receives Global Cork's approval, the original sample is divided in half; one portion is held at Global Cork and the other is packaged and shipped along with the approved cork to CSU's quality control lab in Benicia. When the lot arrives in California, the sample is opened and used as a check against the actual shipment to ensure that the cork that passed Global's inspection is the same cork that has arrived in the U.S.

Global Cork's charter to ensure quality is even more difficult in short supply years, such as 1996. Limited supplies tighten the market, giving more power to factories, which enjoy a wealth of anxious alternative outlets. "In short years, you really have to rely on the relationships that you've built," says Michalski. "This is a long-term business and factories know and appreciate the importers that have an established track record. If you have those relationships, quality can still be had, but maintaining our standards means paying higher prices to manufacturers."

Fortunately, the short 1995 Portuguese crop that drove up prices and left suppliers desperately searching for cork that met quality standards has ended. The 1996 Portuguese harvest produced approximately 50% more excellent quality cork wood than the small 1995 crop. Price spikes continue to reflect inventory shortages, but Michalski expects those prices to eventually stabilize as the pipeline is filled with a sufficient supply of high quality cork wood.

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providing technical know-how to facilitate improvements which will benefit the manufacturer and ultimately the buyer. Through its involvement and recommendations, Global Cork has helped several factories improve their processing procedures, tighten controls, and make improvements that lead to a more hygienic processing facility and better quality cork.

Quality in transit

"I get criticized for going overboard, but cork can suffer as much in shipment as it can in the washing or manufacturing process," Allegro explains as she inspects a shipping container. Inside the blackness of the 40-foot container, she and her staff search for holes, leaks, or off odors that could cause problems for the cork during the five-week trip to the U.S. Just like the cork, every shipping container, must pass Global Cork's inspection.

Integrity

Cork Supply USA isn't the only company that appreciates the merits of this type of thorough, independent evaluation. Nearly 30% of all the cork tested by Global is now being contracted by other cork buyers around the world.

The real challenge to Global Cork's independence, however, is when it evaluates cork from Cork Supply USA's sister company, Cork Supply Portugal. Despite being a member of the Cork Supply Group (which owns Cork Supply USA, Global Cork, and Cork Supply Australia), the Portuguese production arm of the company gets no breaks. About 25% of Cork Supply Portugal's output is purchased by Cork Supply USA, but every shipment undergoes the same exhaustive Global Cork tests as any other shipment purchased by Cork Supply USA.

"Quality is blind," states Allegro. "I know they don't always appreciate it, but ultimately I help Cork Supply Portugal by holding strictly to our quality standards. Ultimately it is the wineries that establish the standards we have to meet. Either the corks pass or they don't. Cork Supply Portugal has learned not to expect any favoritism from us."

The relationship between the two companies is softened, however, by a special service Global Cork provides exclusively to Cork Supply Portugal. "We examine and test all the raw cork they buy. If we can catch TCA problems there, they have a real advantage over the competition."

In an industry where cork quality cannot be compromised, Global Cork offers an added level of protection to cork suppliers and wineries alike. Since Global Cork was founded, no lots received by CSU have had to be returned to Portugal. In the pre-approval process, wineries have declined lots, but this is generally because grades did not meet their specific needs.

"Now cork factories know what we are demanding," says Michalski. They know they can't slip anything past us, and they know that no cork is going to leave Portugal until it has Global's stamp of approval. Global Cork has made a tremendous difference, and I expect more cork companies will follow suit by contracting with Global or starting their own independent labs." ■

Freelance writer Michael Miller's report was edited and closely reviewed by **PWV** *staff and industry experts.*

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VARIATION WITHIN OAK BARREL LOTS:

How many barrels are needed in barrel trials?

by John P. Towey and
Andrew L. Waterhouse,
Department of Viticulture & Enology
University of California, Davis

Imagine that a winery is setting up a barrel trial to determine which barrels are best for ageing Chardonnay. They know that they like to age Chardonnay in Nevers oak barrels with a medium toast, which they have always bought from the same cooper, but they are considering buying barrels from other coopers for the next harvest.

To help decide which coopers would be best, they plan to set up a small scale trial, using this year's Chardonnay, that will include barrels from several coopers.

Common sense tells them that they need to buy more than one barrel from each cooper in order to evaluate the barrels properly and to get results that are representative of each barrel type. But how many barrels should the winery buy from each cooper to get an adequate sample?

For the first time, a recent study conducted by the Department of Viticulture & Enology of U.C. Davis in partnership with several California wineries and a cooper has attempted to answer this question.[5]

Variation within barrel lots

Like snowflakes, no two oak barrels are alike. Since barrels are made from a natural material seasoned outdoors over long periods of time and toasted to a level determined only by the experience of the cooper, it would be impossible even for barrels that are made of the same wood to have exactly the same chemical or sensory characteristics. In addition, barrels are usually made of a random selection of staves.

Unfortunately, very little attention has been paid to variation within barrel lots and its possible sources, and no research, either chemical or sensory, has yet been conducted to determine the degree of within-lot variation. Until now, most barrel experiments have been designed to determine differences between barrel lots.

Barrels are made by one cooper in the same manner with one variable such as oak origin or toast level differing between the various lots. Thus, our knowledge of what makes American oak different from French, medium toast different from heavy, and new barrels different from old is extensive.[2,4] However, the question remains: are barrels that are supposedly the same (same cooper, oak origin, seasoning length, and toast level) really the same or do significant differences exist?

A knowledge of the amount of variation within barrel lots is important for two reasons. First, during academic experiments, it is crucial to know if differences between lots are significantly greater than those within lots. If variation within lots is as great or greater than variation between lots, then the differences between lots, no matter how large, will not be of scientific significance.

> While the others do not contribute directly to the aromas of wine, some have been shown to have an indirect sensory influence.

The second reason addresses the question being faced by our hypothetical winery. A knowledge of the degree of variation within barrel lots is vital to determine the number of barrels needed in each barrel lot during barrel trials. If within-lot variation is low, few barrels are needed in each lot since the barrels can be considered to be more or less the same. But if this variation is high, more barrels are needed to get a representative sample and to reduce the chances that one atypical barrel will influence the results from a particular lot.

The results presented here focus on the actual amount of variation in volatile compounds extracted from oak barrels. The quantitative data obtained were analyzed statistically to determine the number of barrels that are necessary in each lot to reduce within-lot variation to a specific level.

Experimental procedure

Samples of four lots of barrel-fermented Chardonnay were obtained from three California wineries. For each lot, samples were taken from ten barrels of the same type and supplier. All of the barrels were first fill, and the wines had not been racked after fermentation.

The samples were taken after six to seven months of ageing. Of the lots, two were French oak and two were American oak. Each lot originated from a different cooper. The barrel lots are identified and described in Table I.

The concentrations of oak volatiles were determined by extracting the samples with dichloromethane, evaporating the extracts down to 1-mL under nitrogen gas and analyzing them by gas chromatography, using a DB-Wax column.[5] Each barrel sample was analyzed in duplicate.

Results and discussion

Seven oak volatile compounds: furfural, 5-methyl-furfural, furfuryl alcohol, guaiacol, syringol, *cis*-β-methyl-g-octalactone, and *trans*-β-methyl-γ-octalatone were identified and quantified from the barrel sam-

Table I - Identification of barrel lots				
Lot No.	Oak Origin	Toast Level	Days in Barrel	MLF+?
AM1	Kentucky, (U.S.)	Heavy	198	Yes
AM2	Kentucky, (U.S.)	Heavy	220	Yes
FR1	Vosges,(France)	Heavy	212	No
FR2	Centre of France	Medium	225	Yes

ples. Of these compounds, only the isomers of β-methyl-γ-octalactone, also known as the oak lactones, are present in significant amounts in untoasted oak wood. The furans have little aroma while guaiacol and syringol have smoky aromas and the lactones are the oak or coconut aroma.

The other five compounds are formed during the toasting of the barrels.[1] Levels of oak lactones have also been shown to increase during the toasting process, although charring leads to their complete disappearance through evaporation or carbonization.

The compound vanillin is notably missing from this list. Although an important component of many oak-aged wines and a supposed contributor to the vanilla aroma of such wines, vanillin has been shown to be converted to vanillyl alcohol in barrel-fermented whites. The levels of vanillin found in the wines from this experiment were quite small and far below sensory threshold.

Of the seven compounds actually quantified, only the *cis*-oak lactone and guaiacol were found at levels above their generally recognized sensory thresholds.[2] While the others do not contribute directly to the aromas of wine, some have been shown to have an indirect sensory influence.

Furfural, for example, has been shown to increase the intensity of vanilla aroma associated with *cis*-β-methyl-γ-octalactone.[3] Regardless of their sensory significance, the seven compounds and the variations found in them within lots are indicative of the variations caused by the barrel-making process.

Table II contains the quantitative results of this experiment. For each ten-barrel lot, the means and standard deviations of each compound are given. As can be seen from the average coefficients of variation (SD/mean), variation of these compounds within barrel lots was quite high, ranging between 15% and 40%.

In contrast, compounds not extracted from oak such as 2-phenylethanol, which has a rose-like aroma, and 3-methylthiopropanol, which has an aroma of cut hay, had variations ranging from 2% to 5%. Both of these compounds are formed during the alcoholic fermentation.

Oak ageing leads to slight increases in 2-phenylethanol levels, but this amount pales in comparison to the amount formed during fermentation. These results show that the variation of oak-related compounds within barrel lots is at least a factor of three greater than that of fermentation-related compounds.

The results presented here illustrate that within-lot variation must be an important consideration both in the planning and analysis of barrel experiments and trials. The high degree of within-lot variation indicates that, when analyzing results from barrel experiments, collecting data concerning within-lot variation is necessary to determine if the differences observed between lots are significant in themselves or if they are caused by the large random variation of oak barrels.

The best means of reducing the impact of within-lot variation is during the planning stages of barrel trials, when the decision about how many barrels to purchase in each lot is made. Considering data on within-lot variation is essential to the process of calculating lot sizes. The data obtained here were used to calculate a range of lot sizes that will reduce vari-

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ation to an experimentally and financially acceptable range.

The following equation was used for these calculations:

$n = (Z^*_\alpha \sigma / d)^2$

where n = the lot size to be calculated,

Z^*_α = the z-value for a normal distribution at a certain confidence level, α

σ = the population standard deviation,

d = the difference between the sample mean and the population mean that the experimenter is willing to accept;

d will be expressed here as a fraction of the population mean.

Three levels of d were used in the lot size calculation — 10%, 20%, and 30% of the mean — because these levels represented the lower end of the range of variation observed in the individual compounds. The calculation was carried out for each compound in each of the four lots.

The 28 calculated sample sizes at each level of variation were then averaged to obtain the overall sample sizes. These results show that in an experiment attempting to reduce within lot variation to the minimum observed level (*i.e.* 10%), 39 barrels would be needed in each lot. Reducing variation to 20% and 30% would require lot sizes of ten and four barrels, respectively. If a variation of 50% is chosen, the number of barrels per lot is 1.4. Therefore, single-barrel experiments would have variation of greater than 50%!

One of the barrel lots (AM1) had significantly higher variance than the other lots. If this one lot were eliminated from the calculations, the number of barrels required at the 10%, 20%, and 30% variation levels would be 27, 7, and 3. However, since it is not possible to know whether a particular lot of barrels has high or low variability, the more conservative estimates are indicated.

Using these results

It must be remembered, however, that these results are preliminary. Further research is necessary, particularly in relation to linking sensory data with the kind of chemical data presented here.

While chemical variation within lots is important and can be quantified more accurately than sensory variation, sensory analysis is of primary importance in wine. Probably the most vital question that can be posed is: how much chemical difference between barrels is necessary to produce a significant change in sensory response? A coefficient of variation of 30% or 40% may seem high, but, if little or no sensory difference can be detected at that level of variation, the chemical variation is insignificant.

A second question deals with the compounds used to calculate lot sizes. Although this experiment used seven compounds to determine lot sizes, research might lead to the elimination of some of these compounds as not being indicative of sensory variation or lead to the inclusion of other compounds such as vanillin, particularly if the experimentation involved red wines or tank-fermented whites.

Weighting of the compounds as to their relative sensory importance might also improve the accuracy of the calculation. For example, the variation of *cis*-β-methyl-γ-octalactone might be given more weight than other compounds within the calculation, reflecting its supposedly greater contribution to the aroma of wine. The indirect sensory effects of compounds like furfural must also be further investigated to gain a full understanding of how oak aromas are influenced.

Finally, an understanding of the relationship of the concentrations of aroma compounds with their sensory response curves is necessary. Each compound has a sensory threshold concentration below which it cannot be smelled.

In addition, above that threshold, the sensory response of many compounds is not directly proportional to concentration. This is particularly true at levels well above threshold where sensory response is often unaffected even by large changes in concentration. Thus, chemical variation below threshold levels and occasionally well above them might not be of sensory significance.

An in-depth sensory investigation of these aspects will lead to a more accurate estimate of the lot sizes

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Table II - Means and standard deviations of seven individual oak volatile compounds in four lots of ten barrels

	AM I			AM 2			FR 1			FR 2			Avg
Compound	mean (µg/L)	SD	CV	mean (µg/L)	SD	CV	mean (µg/L)	SD	CV	mean (µg/L)	SD	CV	CV
Furfural	1594	699	44%	2408	309	13%	3662	481	13%	925	275	30%	25%
5-methylfurfural	273	82	30%	336	69	21%	399	71	18%	136	40	29%	24%
Furfuryl alcohol	809	125	15%	950	148	16%	739	58	8%	693	150	22%	15%
Guaiacol	38	6	16%	54	21	39%	90	18	20%	66	12	18%	23%
trans oak lactone	20	9	45%	24	5	21%	68	20	29%	136	44	32%	32%
cis oak lactone	149	84	56%	167	35	21%	89	19	21%	189	45	24%	31%
Syringol	50	30	60%	96	31	32%	38	17	45%	23	5	22%	40%

CV= coefficient of variation (SD/Mean X 100) Avg= Average

needed to reduce within-lot variation to a statistically acceptable minimum.

Bearing in mind that these results are preliminary, it can still be stated that single-barrels experiments will not be representative of barrel types being tested. Thus, tasting a sample from one barrel, when attempting to assess the quality of barrels and their compatibility with one's wine, will not lead to an accurate judgement.

Four barrels per lot would appear to be the absolute minimum for such trials. Adding more barrels per lot will reduce variation, but, as lot sizes grow past 10 barrels, large increases in lot sizes are necessary to reduce variation even by a few percentage points. Thus, in most instances, a range of four to 10 barrels per lot is recommended as sufficient to produce accurate results in barrel trials, with the higher number of barrels yielding more accurate results. But remember, these recommendations are based on chemical variation and the final word awaits sensory data. ■

Acknowledgement

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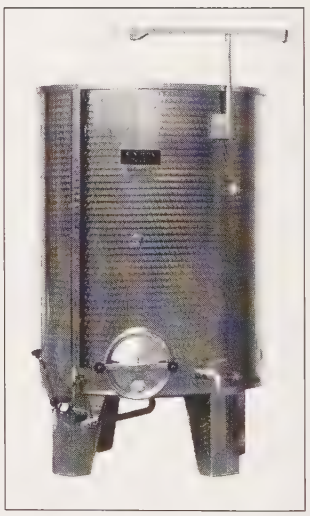

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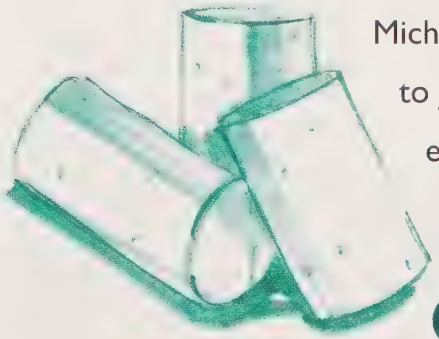

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Coating agents for corks

by K.C. Fugelsang[1], Devin Callaway[2]
Tamiko Toland[3], C.J. Muller[4]

Used worldwide as a wine bottle closure, cork has become almost inseparable from the wine drinking experience. Cork is a natural material (bark of the oak tree, *Quercus suber*) with unusual properties which, so far, cannot be reproduced synthetically.

Suberin and waxes in the cork, combined with a very dense cellular structure, give it low permeability to gas and negligible permeability to liquid. Cork has between 15 and 40 million gas-filled cells per cubic centimeter (milliliter), which contribute to its elastic properties as well as its strong grip on the inside of the bottleneck. The many cells bisected by the process of cutting the cork act as minute suction cups on the side of the glass, making insertion and especially removal difficult.

Because of the strong forces between the cork and glass, coating agents are used. Cork coatings, applied as part of finishing operations, can accomplish four important goals. First, they ease movement of cork (both into and out of the bottle) by reducing frictional forces. Second, they improve impermeability by restoring some of the cork's waxes and oils which are lost during the boiling and washing phases of processing. Third, they fill imperfections in the cork surface, providing a more continuous seal between cork and glass. Last, the cork coating itself bonds with the bottle, reducing the potential of leakage and "cork push-in" (see below).

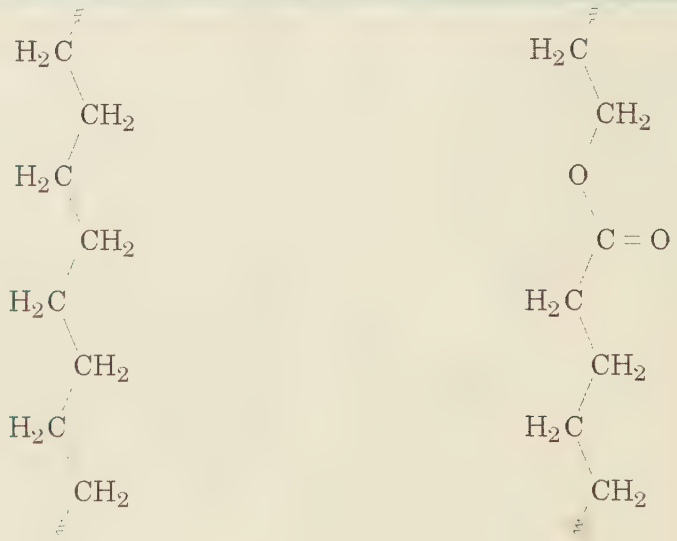
Paraffins were first used in the early part of the 20th century to lubricate agglomerate corks. Subsequently, their use was extended to natural cork. Cork, paraffin, and glass are all solids at room temperature, creating a solid-solid-solid interface. This makes the cork fairly difficult to remove.

More recently, several other cork coatings, including silicones and polymeric products, have been developed. The combination of coating products, amount of product used, and application methods all combine to create a variety of options with the ultimate goal of a cork which will insert and remove appropriately while preventing leakage of wine. Understanding these complex interactions between components of the seal requires an examination of the individual coatings: paraffin, silicone, and polymers.

Paraffin coating agents

Paraffins comprise a large group of long-chained, simple hydrocarbons which are chemically unreactive to cork and wine. This lack of reactivity is due in large part to the absence of double bonds (saturation) or other reactive

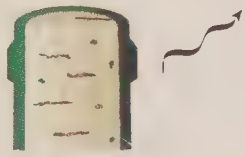
Fig. 1: Paraffins are a class of simple, saturated hydrocarbons consisting of only carbon and hydrogen. They can be branched or straight chained, as depicted here. Waxes, although they have similar long hydrocarbon chains, have polar ester groups on them which make them much more reactive than paraffins.

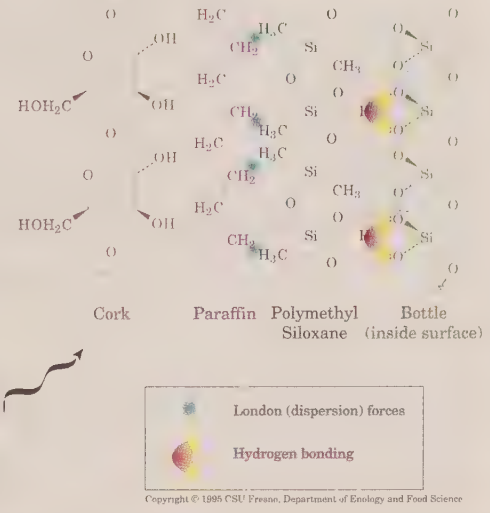


Paraffin
(26 – 38 carbon alkane)

Wax
(ester of 16 – 40 carbon alcohol and acid)

Fig. III: The left cork is composed of cellulose, a long polymerized chain of glucoses. In the real environment of the cork, this chain is part of a rough and irregular surface. The paraffin component, although shown as a monolayer, exists as an intertwined agglomeration of long, convoluted, heterogeneous molecules. The paraffin physically interacts with cork and (in the absence of an overcoat) the glass, filling irregularities in both. Here, it is shown with a silicone overcoat which, similarly, is probably not a monolayer. The silicone can interact in a very weak way with the paraffin and in a weak (but significant) way with the surface of the glass.





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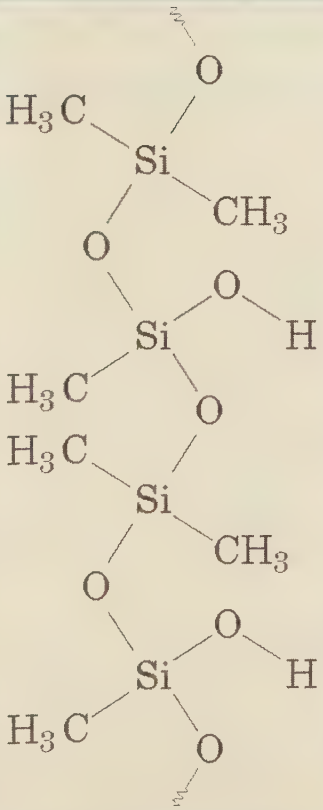
groups in the chain.

Paraffins are often referred to as "waxes" because of their physical appearance and texture. However, waxes are actually long-chained esters of alcohols and fatty acids (for comparison, see figure I). The physical properties of petroleum-based paraffins vary depending on molecular weight and whether the molecules are branched or straight-chained. The melting point is usually around 40°C (105°F). Originally, paraffin was applied using a "cold-block" technique where corks were tumbled with pieces of paraffin. Mineral oil was often utilized to improve the surface adherence of the paraffin which is insoluble in water. It had the secondary benefit of providing a slippery liquid layer, thus making a solid-solid-liquid-solid interaction.

Unfortunately, at room temperature, mineral oil and paraffin are only marginally miscible. Thus, cork surface treatments which are supplemented with a mineral oil can leave a trace "slick" in the first glass poured after opening. This feature led to such formulae being discontinued from common use.

Today, paraffin can be applied more evenly using an emulsified solution or heated, liquified paraffin which is sprayed onto the corks. The paraffin is emulsified in water by the use of "carriers," fatty acids or their salts and triethanolamine. Neither application contains slipping agents, so removing the treated cork from a bottle can be very difficult without the addition of silicone or a like compound.

Fig. II: Polymethylsiloxanes can vary in the ratio of methyl-to-oxygen side groups, although the silicon-oxygen-silixon-oxygen backbone always remains the same.

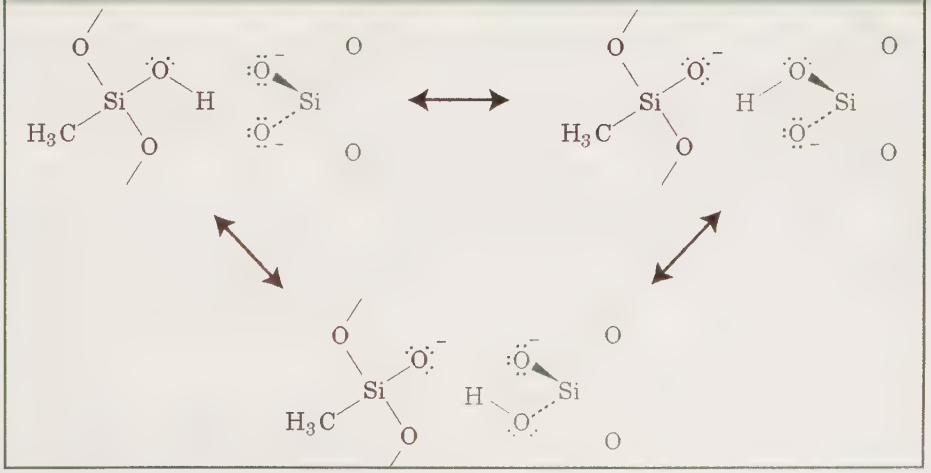


Silicone coating agents

Silicones (polymethylsiloxanes) were first introduced to the U.S. for use on corks in the early 1980s, although they have a much longer history in Europe. Silicone preparations are referred to as "oils" although they are silicone and oxygen-based polymers (see fig. II). Siloxane coatings are typically applied as an overspray on top of paraffin or polymerics.

The physical properties of silicone polymers depend on the chain length and ratio of methyl groups to oxygen. As the number of methyl groups increases, the molecule becomes more paraffin-like. This improves the mole-

Fig. IV: In this example of hydrogen bonding, the strongly electronegative (electron-rich) oxygens attract the hydrogen, which acts almost like a bare proton. In a sense, these molecules share the hydrogen. Where this figure depicts three different bonds, the hydrogen is in fact held partially, though not equally, by all three oxygens.



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cule's adherence to paraffin, while reducing its chemical interaction with the glass. As the number of oxygens increases, so do the potential sites for hydrogen bonding and polar interactions. This results in a tighter gripping action between silicone and cork as well as between silicone and glass. Thus, application of a silicone overcoat provides a liquid layer between the paraffin and glass, giving a solid-solid-liquid-solid interaction.

Increasing the amount of silicone in an application results in decreased friction which reduces the force required for insertion and removal. If too much silicone is used, the cork may insert too deeply into a bottle and can leave a residue floating on top of the wine. Conversely, decreasing the application level will increase the force required to insert and remove the cork. Silicone will also improve the sealing effects of the paraffin. The type of corker, bottling line speed, and length of wine storage are all factors which influence the optimum silicone level.

Polymeric coating agents

Polymeric coatings have been used to treat cork ends and for coating the entire cork. Properly applied, the polymer encapsulates the cork. Because of this, it is believed by some that such a seal slows and potentially prevents development and extraction of undesirable flavors and aromas into the wine. Although we are unaware of any study validating this belief, it can be said that polymers, and paraffin/silicone coatings as well, serve to control residual dust levels.

One characteristic of polymers is that they must be completely cured before use. This is accomplished by utilizing heat after application. In order to ensure sufficient adhesion to the cork, the cork must be free of surface moisture. The combination of moisture control and quick drying may reduce formation of TCA (2,4,6-trichloroanisole) by minimizing the opportunity for microbial growth.

Since the above benefit has not been proven and the application involves several sensitive controls to avoid cracking and peeling during compression, this type of coating agent has not become widely used. Polymeric coatings are usually recommended only for wines destined for short-term ageing. Because they do not promote slipping, polymerics are usually treated with a silicone overcoat.

Physical factors

The seal of the cork in a bottle depends on the physical properties of the cork, coating agents, and the bottle. The cork's natural recovery ability forms a pressurized seal against the glass. To maximize the effectiveness of the seal, the dimensional specifications of the glass are defined and controlled within the top 21mm of the

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bottleneck. Changes in bottle profile may require changes in the diameter of the corks used. A wider bottleneck with the same diameter cork will result in reduced extraction forces while a narrower bottleneck will result in higher extraction forces.

The length of the cork will affect the removal force also. The longer the cork, the greater the force required to remove the cork. Conversely, a shorter cork requires less extraction force.

During the corking process, a cork should not be compressed more than one-third of the cork's original diameter. For example, a standard 24mm cork should not be compressed to less than 16mm. Over-compression can lead to irreparable damage to cellular resiliency and dramatically compromise sealing properties.

The surface of cork presents many imperfections such as cracks, lenticels, and spots of hard wood which can compromise the integrity of the seal. Typically, the ratio of surface imperfections to smooth cork surface has been used to define a cork's quality and is also a good indicator of the potential effectiveness of the seal.

Chemical factors

There are several chemical bond interactions which may occur between the cork, its coatings, and the glass (fig. III). These are collectively known as "dipole" forces and, in general, describe the attraction that full or partial positive and negative charges have for each other.

Hydrogen bonds may form between hydroxyl groups of the silicone and oxygens in the silicates which make up the surface of the glass (see fig. IV). Similarly, they may form between the hydroxyl groups in the silicone and hydroxyl groups on the cork. Although weaker than covalent or ionic bonds, they are stronger than the London forces (dispersion forces) at work between the silicone and paraffin.

Increasing the average molecular weight of the paraffin increases the contribution of London forces, causing an increase in the melting point, thus making it more solid-like. Changes to the structure of silicone by increasing the chain length or altering the ratio of methyl to hydroxyl groups will change its interaction with paraffin, cork, and the glass by affecting hydrogen bond formation.

Another type of interaction which can influence slipping is repulsion due to the highly electronegative nature of oxygen. Oxygens not involved in hydrogen bonding in the silicone will tend to repulse each other. Furthermore, the non-polar hydrocarbon paraffin, being hydrophobic, will tend to avoid interaction with the hydrophilic, or polar, portions of the silicone coating agent or glass. This has the effect of keeping the two layers distinct, like oil and water.

Removing the cork

How do all these forces affect the actual process of removing the cork? They aren't apparent to an individual attempting to remove a cork from a

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bottle, but together they act dynamically, orchestrating a sequence of events. Let's examine the forces that a consumer must combat to enjoy a glass of wine.

A wine consumer presented with a bottle of wine, removes the capsule (if present) and inserts a corkscrew into the cork. After the corkscrew is inserted, sufficient energy must be applied to overcome the complex of forces over the contact area of the cork. The paraffin is still solid, although it is under pressure, which will reduce its melting point. The initial force required to start the cork's movement is large, but the silicone acts as a lubricant, allowing the cork to begin sliding more easily.

Once the cork is moving, the paraffin softens due to pressure and the heat produced by friction, the lubricant continues to work, and the contact area steadily decreases, easing cork removal. At the same time, the headspace volume is expanding, requiring additional force to overcome the partial vacuum. Finally, the cork comes out with a pop as air rushes into the bottle to fill the headspace, and the consumer is free to enjoy the wine.

Conclusion

What are the implications of the selection of coating agents to a winemaker? The winemaker wants to facilitate the consumer's task while also providing an effective seal to ensure preservation of the wine. It is important to remember that cork and glass are not isolated components and that changes in bottle style may require changes in the cork dimensions and/or coating agents and amounts.

When the cork and inside diameter of the bottleneck are properly matched, the physical and chemical interactive forces described previously provide for an effective seal while allowing easy removal.

It is important to recognize that changes in coating agents and/or amounts may alter the mechanical properties of the seal. Coatings can result in a wide range of performance between a tightly sealed cork which is almost unremovable and a loosely seated cork which slides into the bottle when the corkscrew is inserted. Although they constitute only a minute fraction of the cork's thickness, the coating must not be ignored, as they help preserve wine while making cork removal an uneventful part of wine enjoyment. ■

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HUMAN RESOURCES

Communicating with immigrant Hispanic employees

by Trula M. LaCalle, Ph.D.

To our readers —

PWV reviewers tell us that cross-cultural misunderstandings occur frequently in U.S. wineries and vineyards, and that this series of articles will be very valuable to you. However, we recognize that discussions of cultural differences can be a sensitive issue.

By acknowledging that there are cultural differences between U.S. and Hispanic cultures, we do not intend to say that one is better than the other. Observations in an article of this sort can only be general. None of them will apply to all Hispanic people; some of them will also apply to people from other cultures.

Please join this discussion with your letters to PWV, 15 Grande Paseo, San Rafael, CA 94903 or E-mail to cceed@aol.com.

Most interpersonal conflicts in the workplace develop as a result of poor communication. Understanding and being understood can be difficult — even among people with the same language and culture. When employers in the wine industry must communicate across cultural lines with their Hispanic employees, communication difficulties are easily compounded.

Employers may not worry about whether they're communicating effectively with Hispanics when work seems to be moving along smoothly, but the fact that work gets done does not mean that communication has occurred. Measuring the success of communication in this simplistic way ignores the true potential of productivity, safety, and employee satisfaction. Needless to say, when conflicts arise, the issue of faulty communication quickly comes to the forefront.

Communicating with Hispanic employees involves much more than speaking in a common language, although the language barrier is often the first barrier to overcome. English-speaking employers too frequently assume that a Hispanic employee who speaks broken or heavily-accented English is not capable of understanding what is needed on the job. As a result, the employer does not take the time to carefully explain or to be sure that the message has been completely understood. Non-Hispanic supervisors must guard against this subtle bias.

If a Spanish-speaking person is needed to translate, a common error is to assume that an employee with a Hispanic surname speaks Spanish or that he or she speaks Spanish well enough to communicate effectively in that language. In a similar error, an employer may assume that a Spanish-speaking employee who *speaks* English can *read* English well enough to clearly understand what is contained in written instructions.

Culture — like another language

Culture is as important as language in communication between employers and employees. Communicating with Hispanic employees, especially immigrant Hispanics, requires understanding something about the Hispanic culture and being aware of the areas where it differs and even conflicts with U.S. culture. Even within the Hispanic culture there are aspects that are unique to particular regions or countries of origin.

Recognizing the uniqueness of the individual

We must be especially cautious about applying information about immigrant Hispanic cultures to the Hispanics who were born or raised in the U.S. Mexican-Americans — or Chicanos — and other Hispanic-Americans are strikingly different from newly immigrated Hispanics, and as such, do not appreciate being viewed as the same — especially when such inappropriate assumptions about them are used to segregate them from mainstream Americans. Recognizing what is unique about the individual is the crucial first step in understanding the role his or her culture plays.

It's also important to understand U.S. culture and how it is perceived internationally. People from Mexico and other Latin American countries view Americans as materialistic, individualistic, assertive, future-oriented, time-driven, youth-oriented, mobile, efficient, goal-achieving, and linear in their thinking. We cannot assume that the U.S. way of doing things is the only way, the best way, or even universally valued.

In contrast to the U.S. value of looking forward to change, the Hispanic culture values tradition. Hispanics adhere to values that some in the U.S. culture might see as "old fashioned" — such as family, respect for authority, respect for the elderly, loyalty, faith in God, saving face and reputation, personal dignity, and a strong sense of community. In most Latin American countries, the woman's place is in the home, though this is changing. Assimilating Hispanic women in the U.S. are usually quick to point out that Hispanic women are striving for equality, especially in the workplace. In addi-

tion, valuing tradition doesn't prevent Hispanics from striving to improve their socioeconomic situation.

Non-verbal communication

Ignorance of cultural differences can lead to gross misunderstandings. Making eye contact is a good example. In the U.S. culture, we expect employees to make direct eye contact when we speak to them. Eye contact signals that the employee is listening, willing to cooperate, and acknowledges our authority. We also expect eye contact when a person is being honest with us. Looking away means that something is being hidden. In the lower socioeconomic strata of many Hispanic countries, an employee shows respect to a boss or supervisor by looking at the ground when being addressed. Looking the boss in the eye is considered arrogant or confrontational.

Other non-verbal communication can also be a problem. Certain hand gestures common among Hispanics — such as pointing with the middle finger — are seen as vulgar in the U.S. culture. Hispanic cultures think nothing of men touching their crotches in public. By comparison, when Americans signal "come here" by holding a hand palm upward and beckoning with the index finger, the gesture is considered informal and not especially courteous or respectful, but to Hispanics, the gesture is gravely insulting because it is only used when calling their animals.

Americans measure a person's height with an open hand, palm down. Hispanics only use this gesture to measure animals and would be insulted if the gesture were applied to them. Hispanics measure height by using the extended index and second fingers with the palm facing toward themselves. In addition, they use a thumb and index finger to indicate the quantity "two."

Gestures and body language may seem inconsequential at first, until we fully consider how much information we communicate without words.

Positive feelings are often communicated through social gestures among Hispanics. Lavish verbal praise heaped upon a Hispanic will make him or her uncomfortable, since personal achievement is less desired than group or family achievement. A Hispanic employee is not likely to talk about his pleasure with his boss directly to his boss, although he will gladly talk to others about his wonderful *patron*. He or she will demonstrate appreciation for an employer in other ways instead. A male Hispanic may offer to help his boss with a household repair. A female Hispanic may bring her employer a special food she has prepared.

Differences in communication style

In the U.S., we are accustomed to direct, pointed conversation. Non-Hispanics don't like to "beat around the bush." Hispanics often talk for quite awhile about other subjects before "getting down to business." In Hispanic culture, being direct and rapidly getting to the point is considered to be brash, uneducated, or even downright rude.

from left to right: Greg Livengood *(Import/Export)* • Richard de los Reyes *(California)* • Joe Ciatti • Andy Bivona *(Concentrates/Specialty Products)* • John Ciatti *(California)* • Chris Braun *(Import/Export)*

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This is especially true when an employee must deliver bad news to his or her boss. No one — in any culture — wants to be the bearer of bad news, but Hispanics feel especially uncomfortable and will even apologize for unwelcome news. The bad news is usually prefaced by a brief orientation to the situation, softening statements, or even a bit of good news to cushion the blow. The manner is often so apologetic that the employer braces for a true catastrophe, only to find that the problem can be easily resolved.

Communicating about time

Many misunderstandings occur between U.S. and Hispanic cultures in regard to the concept of time. A manager might say, "I want this done right away," only to be frustrated when the task takes twice as long as expected. What do "on time," "right away," "soon," or "tomorrow" mean to the immigrant Hispanic? Certainly not what they mean in U.S. culture. In the U.S., time is a major driving force. We never have enough time; we're always in a hurry; we rush not to be late. In most, but not all, Latin American countries, life takes place in its due course, with fate as its master.

Our cultures don't measure time in the same way, nor do they need to. In rural Mexico, for example, time is not money. Therefore, when working with an immigrant *campesino*, Mexican employee, we must explain what the deadline on a shipping order is and what it means to our profits if the order isn't filled as scheduled. When employers recognize this cultural difference, their communication style changes. Instead of asking that a job be done "right away," they use more specific terms such as "right at this moment." Instead of "soon," they learn to say "by today at 5:00 p.m.," and even then, set the deadline up by an hour in anticipation of tardiness.

As immigrant Hispanics become assimilated into the U.S. culture, they begin to quantify and reckon with time as this culture does. Unfortunately, in the process of their assimilation, immigrants often must face unpleasant U.S. cultural biases against their approach to time, which has been negatively labeled the "mañana attitude." U.S.-born and fully assimilated Hispanics are especially sensitive to stereotyping which assumes that their approach to time is the same as that of Hispanics who are recent immigrants.

Cross-cultural awareness helps us recognize how many communication traps exist between Hispanic and non-Hispanic people in the workplace. We cannot always avoid misunderstandings, but we certainly can reduce the risk and mitigate our errors by being culturally savvy. ■

Trula M. LaCalle, Ph.D. is a human relations and management consultant living in Sonoma County. Spanish is her second language. She is married to a Hispanic and has 25 years experience working with Hispanics from various Latin American countries. Her background in psychology lends unique insights to her training presentations and consultations.

She can be reached at 707/577-9367 or lacalle@metro.net. For more information, check her web site: http://www.LaCalle.com

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Project Quercus findings

In 1993, the European Cork Industry Federation (CELIEGE) in cooperation with the European Economic Community began an in-depth study of the cork industry. The "Quercus" study combined efforts of nine laboratories in six countries to identify the sources of off-flavors associated with cork stoppers and develop a prevention strategy.

On November 22, 1996 preliminary results of the Quercus project were released in Paris. A summary of recommended industry practices will soon be released by the Cork Quality Council for publication in ***PWV***. A brief review of findings released follows.

Numerous compounds were examined as causes for off-flavors in wine. The most prominent, 2,4,6-trichloroanisole (TCA), was determined to be present in the majority of wines described as exhibiting a musty taint. Samples of "off-flavor or musty" wines exhibited the presence of TCA in 65% of the bottles analyzed. This finding corroborates a large body of literature linking TCA to off-flavors in wine and other food products. A by-product of this sensory analysis was development of a standardized flavor wheel that allowed the laboratories to better coordinate their sensory descriptions for the project.

With TCA identified as the major target, each individual component of cork processing was examined for particular susceptibility to its formation. The results of this analysis will form a basis for a protocol of recommended practices for cork manufacturers.

The findings concluded that the single greatest correlation for pre-existing TCA in finished corks was the relative level of TCA in the original raw bark. (TCA in wine has been shown to result from previously contaminated finished cork and from independent developments in the bottle.) A review of TCA occurrence in the forest showed a high incidence of TCA in bark marked with the relatively rare, but easily identified condition "yellow stain." Slight increases in TCA were also found in bark closest to the ground. Specific precautions to avoid high risk materials will be included in the protocol.

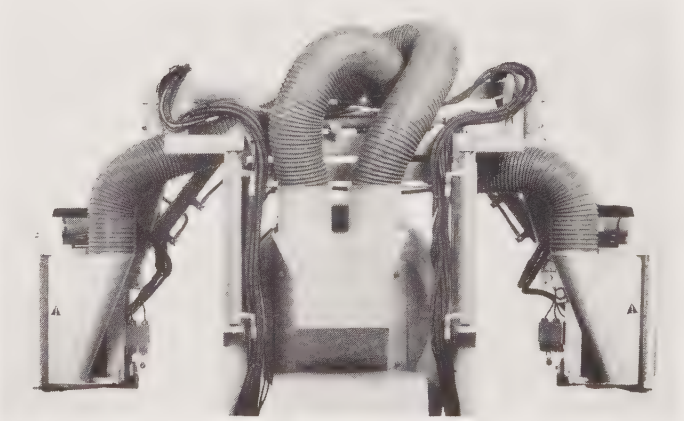
Studies of the manufacturing process did not find specific areas that were prone to the introduction of TCA. There was a conclusion that finished corks prepared with a chlorine-based wash contained significantly higher levels of residual chlorophenols. Chlorophenols have previously been shown to be a precursor to TCA development in wine bottles when other conditions (such as mold or mold spores) are present.

Studies of storage conditions were conducted under two models. The ability of TCA to migrate from a highly contaminated environment through a cork stopper in a finished wine bottle was tested. Tests did not show any conclusive evidence of such migration after nine months.

The second model tested the likelihood of TCA being transmitted from a highly contaminated environment to cork stoppers under typical warehouse storage conditions. Tests showed that one week of storage in a highly contaminated environment produced significant contamination. When used in bottling, the contaminated corks "leached" TCA into bottled wine at levels consistent with commercial samples of tainted wines (approx. 6 parts per trillion).

The same test was performed with empty bottles in warehouse storage conditions. The bottles became contaminated after one week of storage, and when used with clean corks, produced high TCA levels (approx. 170ppt). The difference in relative concentration was attributed to the relative surface areas of the bottle compared to the cork. Industry guidelines governing storage practices are a major focus of the study.

The report will be used to develop a protocol for practices and techniques governing selection and storage of raw bark, stopper manufacturing, final preparation, and shipping. ■



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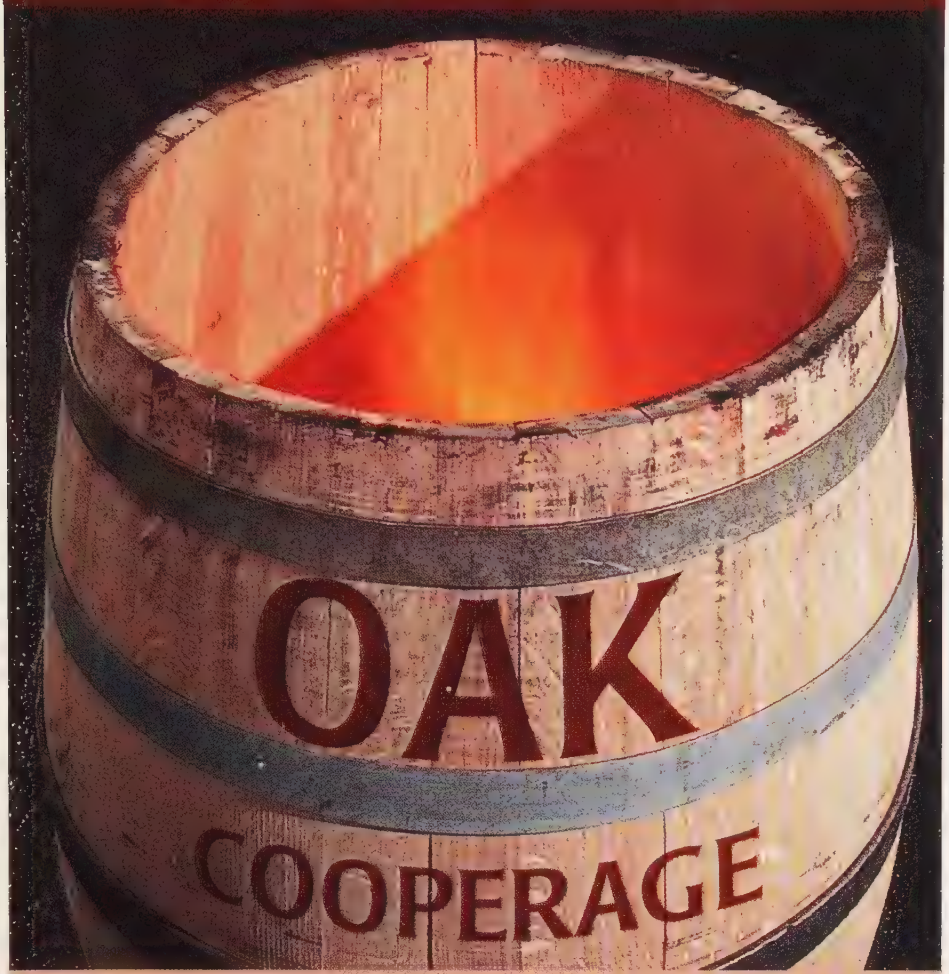

Photo by Fred Lyon

INDEX TO SUPPLIERS

Barrel Associates	65	Seguin Moreau	66
Barrel Builders	63	Stavin Incorporated	62
Blue Grass Cooperage	64	Tonnellerie Boutes	67
The Boswell Company	63	Tonnellerie Francaise	61
Canton Cooperage	62	Tonnellerie Mercier	68
Cellulo Co.	68	Tonnellerie Radoux	62
Demptos Napa Cooperage	64	Tonnellerie Saury	64
Innerstave, Inc.	64	Vincent Bouchard	66
Mel Knox	63	Western Square, Ind.	65
Mendocino Cooperage	65	World Cooperage	62
Pickering Winery Supply	64		

TONNELLERIE FRANCAISE

Tonnellerie Francaise has made significant changes, introducing a new logo to better reflect association with a sister company in Bordeaux, France: Tonnellerie Nadalie.

Tonnellerie Francaise

Started in 1980, Tonnellerie Francaise, continues to be a pioneer in American oak barrels coopered in the traditional French method. Stave mills source wood in five states (Missouri, Minnesota, Oregon, Pennsylvania, and Virginia), exploring various American oak wood sources to craft the finest barrels possible. All wood is naturally air dried for a minimum of 18 months, then coopered and toasted to each winery's specifications.

Tonnellerie Nadalie of Bordeaux produces French oak barrels in a variety of styles. The fourth generation of family ownership manages the cooperage, founded in 1902. Both Burgundy and Bordeaux shapes are offered in Export, Fast Aging Export, and Chateau styles. Quality is controlled from forest to mill to cooperage. All wood is naturally air dried a minimum of 36 months, then coopered and toasted to each winery's specifications.

Tonnellerie Marsannay, a cooperage in the Burgundy region of France, is now represented by Tonnellerie Francaise.

Tonnellerie Francaise combines Old World tradition and New World technology to offer wineries the best in French and American oak cooperage. Additionally, it sells silicone bungs, barrel washers, and oak inserts.

For more information, contact:
Tonnellerie Francaise
Duane Wall or Tim Olsen
1401 Tubbs Ln, Calistoga, CA 94515
tel: 707/942-9301; fax: 707/942-5037

Please see our ad, page 2.

CANTON COOPERAGE

Long known for fine American oak wine barrels, Canton Cooperage now also makes barrels from Hungarian oak.

Canton obtains significant quantities of tight grain, split, Hungarian oak staves and heading from a large-capacity mill in Hungary. The woods are the same species as the oaks of France. At Canton's cooperage in Kentucky, the Hungarian oak receives the long air-drying and oak fire toasting Canton's other barrels do. Customers have their choice of toast level and styles of 225L Bordeaux or Burgundy or 265L Bordeaux barrels. Hungarian oak barrels were well accepted when they were available in the US a number of years ago. They are again being accepted to age fine wines, and today offer the added benefit of an affordable price tag.

Canton built its reputation on its American oak barrels. With white oak supplied from its own three mills, the cooperage incorporates a long air-drying regime and oak fire toasting of the barrels to customers' specifications. Toasting is done by time and temperature to insure uniform consistency barrel to barrel, year to year. Bordeaux (225L and 265L), Burgundy, and thin-stave styles are available.

For more information, contact:
Canton Cooperage
365 S. Woodlawn, Lebanon, KY 40033
tel: 800/692-9888; fax: 502/692-3998
e-mail: KSEYMOUR@ix.NETCOM.COM
Please see our ad, page 42.

TONNELLERIE RADOUX USA

Tonnellerie Radoux USA, Inc., supplies California, Oregon, and Washington wineries with premium American and French oak barrels. In 1996, the production of American oak barrels increased by 30%. Radoux USA has introduced 70- to 80-gallon American oak barrels, in addition to the more traditional Bordeaux and Burgundy style barrels (60 gallons).

The Sonoma County cooperage has preserved the traditional "savoir faire" of French coopers. Radoux enologists work very closely with winemakers and the INRA (French National Institute of Agronomic Research) to improve the association between wood, toasting, and each type of wine. Consequently, Radoux coopers manage to capture the aromatic flavors of the oak through maturing, air-drying, and toasting processes, allowing customers to create renowned wines year after year.

With subsidiaries in Spain, California, Australia, and South Africa, Tonnellerie Radoux Group (TRG) is one of the first independent international cooperages in the world. In 1996, TRG achieved 70% of its sales overseas, and its facility in Jonzac, France, was the first cooperage in the world to be ISO 9002 certified.

For more information, contact:
Tonnellerie Radoux USA
578 Martin Ave., Rohnert Park, CA, 94928
tel: 707/588-9144; fax: 707/588-8547
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WORLD COOPERAGE COMPANY

One of the most progressive and innovative producers of American and French oak barrels, World Cooperage Company guarantees the key quality factors in coopering: wood origin, grain tightness, wood seasoning, and toasting.

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Committed to bringing even better barrels to the wine industry, World Cooperage experiments with new oak sources such as Chestnut oak and works with Dr. James Swan and top winemakers researching the air-drying process, analyzing various oak structures, and producing wines that showcase the diversity of character derived

from various toast levels, air-drying times, and stave treatments.

World Cooperage also produces toasted oak chips, barrel renewal systems, and tank stave systems sourced from air-dried French and American oak, fire toasted to winery specifications.

Experienced in both wine and barrel making, the World Cooperage staff continues with the same commitment to quality and service as its parent company, Independent Stave Company, established in 1912.

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4391 Broadway, American Canyon, CA 94589
tel: 707/644-2530; fax: 707/644-8218
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PO Box 586, Glenelg, S.A. 5045
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Please see our ad, pages 18, 19.

STAVIN INCORPORATED

StaVin designs oak infusion systems offering versatility and cost-effective alternatives to traditional oak barrels without compromising flavor. Available in medium, medium-plus, and heavy toast, the oak staves and beans are premium quality Center of France, tight-grain, 24-month air-dried oak or 36-month air-dried American White Oak from Missouri.

All staves and beans are traditionally fire-toasted, following all thermal parameters to ensure full heat penetration. After toasting, all products are vacuum packed to seal in flavors and aromas.

StaVin's systems allow customers to impart quality oak flavor at a fraction of the cost of new oak barrels. Loaded with French or American oak staves, modular tank units achieve the maxi-

mum benefit within stainless or oak tanks. Easy and convenient, StaVin's American Oak Bean is packaged in 10- and 20-pound, food-grade, FDA-approved, nylon bags to be placed directly in the tank.

StaVin offers three methods to impart neutral barrels with the same flavors as French and American oak barrels. StaVin's traditional barrel inserts are loaded with full staves and rejuvenate barrel interiors. Both StaVin's Oaksleeve, which is comprised of 18" mini-staves and packaged in FDA-approved nylon, and StaVin's stainless steel Infusion Tubes are loaded through the bunghole of the barrel — offering alternatives to pulling heads from barrels.

StaVin is the sole U.S. marketing agent for Tonnellerie Sansaud and Tonnellerie Berthomieu French oak barrels and Kelvin Cooperage Amer-ican oak barrels.

All StaVin's tank and barrel oak infusion systems are now available in Eastern European oak.

For more information, contact:

StaVin Incorporated
PO Box 1693, Sausalito, CA 94966
tel: 415/331-7849; fax: 415/331-0516

Please see our ad, page 30.

BARREL BUILDERS

Barrel Builders is the exclusive distributor of Tonnellerie Marchive barrels from France and Budapesti Kadar barrels from Hungary.

Located in the heart of the Cognac region in Jarnac, France, Tonnellerie Marchive has been managed by the Marchive family for almost 60 years. Using woods sourced from the leading forests of France, the cooperage produces a full range of Burgundy and Bordeaux style barrels. All wood is individually selected, split at the cooperage, and air dried a minimum of 24 months.

Budapesti Kadar barrels imported to the U.S. are built to Barrel Builders' specification in both Burgundy and Bordeaux styles. Oak is sourced from the Tokaj region and is similar in texture and flavor to the oaks of central France. Barrel Builders was unable to meet the demand for Budapesti Kadar barrels in 1996.

Barrel Builders' Service Division reconditions and repairs thousands of barrels annually. A shaved and retoasted barrel offers toasty oak flavors at a fraction of the cost of a new barrel. In addition, Barrel Builders is a leading supplier of oak chips from France, white-oak from the Midwest, and Oregon oak from the Pacific Northwest. Other products include premium silicone bungs, sulfur wicks and disks, and a full range of cooper's supplies.

For more information, contact:

Barrel Builders, Inc.
PO Box 268, St. Helena, CA 94574
tel: 707/942-4291; fax: 707/942-5426

Please see our ad, page 32.

THE BOSWELL COMPANY

Boswell represents three specialized small French cooperages.

Tonnellerie Sirugue is a fourth-generation Burgundy barrel producer in Nuits-Saint-Georges. The company is committed to proper air drying. Standard natural seasoning regime for 27-30mm staves is 18 to 24 months. Small quantities of three-year air-dried oak are also available. These Burgundy barrels are used almost exclusively for Pinot Noir and Chardonnay.

Tonnellerie Berger is a family cooperage at Vertheuil in the Medoc area of Bordeaux, which produces only barrels with 18-22mm stave thickness, aging its entire oak inventory for 24 months minimum. The Berger house barrel is a tight-grain blend of Allier-Nevers oak toasted for 25 minutes. Producing 4,000 barrels per year, this tonnellerie has supplied red wine barrels to Medoc chateaux for over 40 years.

Barrel making at Tonnellerie Sirugue

Tonnellerie Bossuet is a cooper and "merrandier" (stave splitter) in the Charente-Maritime region. Currently annual production is 1,200 barrels. Bossuet tight-grain Bordeaux style barrels are purchased primarily by Merlot producers in St. Émilion and Pomerol.

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Please see our ad, page 78, 82.

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If you don't know about the two cooperages represented by Mel Knox, then you are an enological Rip Van Winkle, or perhaps you've just spent too much time surfing the Net.

Mel Knox represents two of France's top cooperages, Francois Freres of Burgundy and Tonnellerie Taransaud. There is only one problem with the barrels of these two cooperages: there are never enough. Interested parties are urged to get their orders in or get on waiting lists as soon as possible.

Two items of news for barrel lovers:

A.) Francois Freres has a stave mill in McMinnville, Oregon, where logs of Oregon oak, *quercus garryana*, are being milled into staves. The wood is air dried two years, and the first barrels from this wood are being made at this writing (October '96). Preliminary tests with these barrels show exciting possibilities.

B.) Tonnellerie Taransaud has three coopers who have won "Meilleur Ouvrier de France" awards. Taransaud can deliver round casks, ovals, upright tanks, even ovals with carved heads, all made by these brilliant craftsmen, from wood over five-years-old. No other cooperage can make this claim.

For more information, contact:

Mel Knox Barrel and Bottle Broker
505 29th Ave., San Francisco, CA 94121
tel: 415/751-6306; fax: 415/221-5873

Please see our ad, page 80.

BLUE GRASS COOPERAGE

Nothing conveys its subtle pleasures like fine wine; nothing releases wine's treasures like masterful cooperage matched to the vintner's art. The mission of Blue Grass Cooperage is to make barrels that help deliver the complexities and character of your wine.

That's why every barrel at Blue Grass Cooperage is made to order. Every order is made with peerless consistency in quality.

The process begins with wood selection. Blue Grass Cooperage takes only the finest American oak from northern forests where slow-growing seasons produce tight-grained wood, perfect for creating premium quality wine barrels.

Every stave is seasoned in open air to your specifications. Every barrel is custom-toasted over oak-chip fires for slow, deep penetration. Every heading piece is individually toasted using Blue Grass Cooperage's proprietary process. No other process provides more even toasting or deep penetration.

To complete the process, barrels are bound together with heavy gauge, bright-finished, galvanized hoops, and the cooperage sands the exteriors to a fine finish.

For more information, contact:
Blue Grass Cooperage
585 Fifth St. West #211, Sonoma, CA 95476
tel: 707/939-9790; fax: 707/939-9791
Please see our ad, page 83.

DEMPTOS NAPA COOPERAGE

You don't have to be an enological Rip Van Winkle to have missed the dramatic changes at Demptos! During six years of Francois family ownership, the cooperage in Bordeaux was revamped and a new cooperage was constructed in Napa, CA. Tonnellerie Demptos and Demptos Napa Cooperage have produced world-class French and American oak barrels for some of the world's finest wines.

Demptos selects tight-grain, white American oak from heavy clay and gravel soils within a 50-square-mile area in southern Missouri. Following natural air drying and seasoning for 24 months, the stave and head wood is sweet and delicate and ready for the final coopering into 225L Burgundy and Bordeaux export-style barrels. Traditional oak-fire bending and toasting (minimum of 45 minutes) allow complete development of toasty, sweet oak flavors in the finished barrels.

Backed by on-going research at the University of Bordeaux, Institute of Enology, Demptos coopers French oak barrels in Burgundy and Bordeaux styles. Nine forest selections and 10 barrel styles promise the best barrels to complement your wine.

Visit Demptos Napa Cooperage for a tour and barrel seminar. The staff, including Will Jamieson, Mark Heinemann, and Mario Denys, look forward to working with you in 1997.

For more information, contact:
Demptos Napa Cooperage
1050 Soscol Ferry Rd., Napa, CA 94558
tel: 707/257-2628; fax: 707/257-1622
Please see our ad, page 17.

TONNELLERIE SAURY

Wines of distinction deserve well-crafted barrels, Tonnellerie Saury has been perfecting the artisanship of cooperage for three generations. For the rest of the story, call Bayard Fox.

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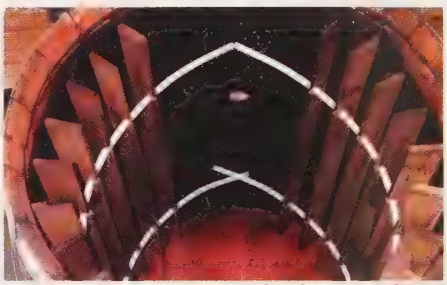
INNERSTAVE, INC.

"Original ideas are few," and most are not effective tools to save time or money. Innerstave is the original barrel insert and has been used as an effective tool to add oak character to wines for over 18 years. It saves money through lower costs for oak barrel flavors.

Since 1979, Innerstave has gained wide acceptance in all forms of barrels and tanks because of its exclusive, non-invasive, cleanable design. Innerstave, designed for stainless tanks, requires no welding and is installed by our own qualified coopers.



Innerstave receives highest acclaim for its award-winning, premium oak character which can be found in many highly rated wines. Innerstave's on-site supply of aged French and American oak ensures availability of prepared oak for each Innerstave request, and gives the winemaker control of oak type, wood-to-wine ratio, and toast level. Each is important when making award-winning wines.

Innerstave works closely with winemakers so the decisions of wood type and toast level match each wine. These decisions are then carefully adhered to by Innerstave's design, manufacturing, and installation staff. All wineries purchasing from Innerstave are guaranteed satisfaction.

For more information, contact:
Bob Rogers
Innerstave, Inc.
24200 Arnold Dr., Sonoma, CA 95476
tel: 707/996-8781; fax: 707/996-1157
Please see our ad, page 85.

PICKERING WINERY SUPPLY

Despite being hard to pronounce, Tonnellerie Vernou (say "Vair new") has certainly earned a name for quality, consistency, and competitive pricing in just four years in the American market.

Experience has shown that typical

Experience has shown that typical Vernou barrels offer many layers of flavors with almost all grape varieties when long barrel-ageing is envisioned. Jean-Paul Vernou believes in the integrity and uniqueness of flavors given by each forest. Vernou has returned to splitting its own staves in order to gain better control of the raw material.

Vernou's unique "early white" waterbent barrels wash away the harshest tannins and allow for faster integration of oak and wine. Waterbent barrels are offered in single woods or three-wood blends for added complexity.

Since Jean-Paul learned his trade by apprenticing at many of the coopers near Beaune, he is one of the few coopers with the prestigious title of *compagnon*. For 1997, Vernou is offering special Burgundy barrels, made the way Jean-Paul learned in Burgundy.

All barrels are made to the customer's particular wishes, including toasted heads and slow toasting, and in sizes from 10 to 800L. Forests available are Allier, Nevers, Vosges, Limousin, and Tronçais (rare and expensive).

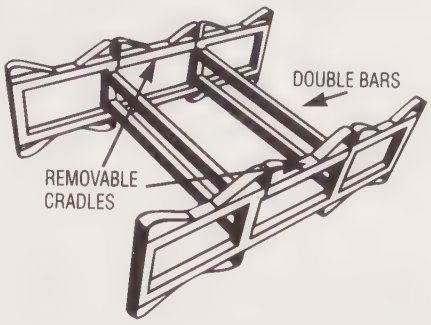
Staves are air dried according to the age-old formula of one month of age for each millimeter of raw stave wood: minimum 30 months for the "export" barrels (finished barrel 27mm) and a minimum of 24 months for the "thin-staved" Chateau, Chateau Ferré, and Léger (finished barrel 22mm).

For more information, contact:
Pickering Winery Supply
888 Post St., San Francisco, CA 94109
tel: 415/474-1588; fax: 415/474-1617
Please see our ad, page 83.

WESTERN SQUARE

Western Square Industries is the wine industry's largest supplier of portable (forklift-able) steel barrel racks to the wine industry. Standard two-barrel models include two high-profile types (sometimes called topping racks) and a low-profile model which is also a topping rack, since the wine can also be worked in place when it is used. Other standard items are: a rack for the bottom tier of barrels, which can be pallet-jacked from all four directions, and a rack for four barrels.

Standard models will accommodate



all 200L and 225L barrels, but special models are also available. Regardless of what racks your winery uses, Western Square can supply racks that will co-stack.

For those wineries still stacking barrels in pyramids, Western Square makes a cradle which replaces four chock blocks and thereby facilitates stacking.

Western Square offers two handy devices for holding a single barrel above tiers of two barrels, useful when you have an odd number of barrels in a lot. One is the old pyramid cradle, and the other is the new removable center cradle, pictured here with the double-bar rack, the best model two-barrel rack.

Western Square also makes a barrel-washing system which is specifically for use with portable racks.

For more information, contact:
Western Square Industries
1621 N. Broadway, Stockton, CA 95205
tel: 800/367-8383 in California, 800/367-7810 outside California; fax: 209/944-0934
Please see our ad, page 79.

BARREL ASSOCIATES INTERNATIONAL

Barrel Associates International offers the finest barrels possible for your wine. Each barrel serves as a flavor platform to showcase your fruit. Lovely textures and elegant flavors marry with your best vineyard efforts to produce wine you can be proud of.

Tonnellerie Dargaud et Jaegle — For the absolute finest in craftsmanship and taste, Tonnellerie Dargaud et Jaegle Burgundy and Bordeaux barrels add lovely texture and flavors to your wine. A third generation cooper, Jean Marcel Jaegle immerses the finest air-dried French oak into hot water before bending and firing these elegant barrels. This process allows for a deep penetrating toast whose consistency provides predictable and spicy components to your wine year after year. Nevers, Tronçais, Allier, Vosges, Jura, Darney, and Les Bertranges are some of the very tight-grained woods that are available from Tonnellerie Dargaud et Jaegle.

Maison Louis Latour — The barrels that have made Corton-Charlemagne the legendary wine it has become are available in limited quantities through Barrel Associates International. Each barrel is handcrafted in traditional Burgundian style and made from a combination of Allier and Vosges woods.

Classic American oak — The sophisticated flavor of Barrel Associates' American oak adds texture and finesse to all wines. Completely air-dried wood and extended firing and toasting time, combine to make this American oak integrate perfectly with all of your fine wines. These American oak barrels are available in water-bent or fire-bent format and to your specific toasting requirements.

For more information, contact:
Barrel Associates International
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tel: 707/257-0714 (CA, OR, WA), 800/227-5625; fax: 707/257-0742
Please see our ad, pages 5, 24.

MENDOCINO COOPERAGE

Under master cooper Keith Roberts, Mendocino Cooperage produces American and French oak wine barrels. Roberts received his traditional cooperage training in Bordeaux and Cognac.

To create the highest quality American barrels, the company primarily selects white oak staves produced in southeastern Minnesota. These staves originate from slow-growing trees within 100 miles of the stave mill. After milling, the green staves are shipped to the cooperage in Hopland, CA, for proper stacking and 24 months of air-drying.

Mendocino Cooperage builds 60-gallon Bordeaux and Burgundy barrels. The coopers also make economically attractive 65- and 70-gallon barrels that fit on standard pallet racks.

Mendocino Cooperage toasting is performed with French-style braziers containing oak fires. For house-style

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American oak barrels, bending and toasting require 50 minutes of firing time. Deep head toasting is accomplished by firing the head boards individually prior to assembly.

Limited quantities of French oak barrels are now available from Mendocino Cooperage. "Merrain" or split oak is sourced from the great national French forests such as Loche, Jupilles, Tronçais, and Chateauroux. This tight-grained oak is split into rough staves and naturally aged at Chadenac, France, for two years before shipment to Hopland. Classic wine coopering techniques are then combined with modern, efficient equipment to produce high quality French oak barrels at an affordable cost.

Mendocino Cooperage wine barrels are warranted for three years. Visit Hopland to inspect the air-dried stave stocks and tour the cooperage in operation.

For more information, contact:
The Boswell Company
1000 Fourth St., Ste. 360, San Rafael, CA 94901
tel: 415/457-3955; fax: 415/457-0304

Please see our ad, page 53.

SEGUIN MOREAU USA, INC.

Craftsmanship, commitment to quality, and unparalleled service are words synonymous with Seguin Moreau. For more than 100 years, the cooperage has made barrels in the traditional French method, tracing its roots back to the Cognac region of France.

Seguin Moreau's worldwide success is directly related to its commitment to the wine industry. This commitment was directly responsible for the company building a cooperage in Napa, CA. Clients are invited to visit the cooperage and witness the production of barrels in the traditional method.

Determined to make the finest American oak barrel on the market, Seguin Moreau is vigilant about quality control; every part of the barrel-making process is regulated, beginning in the forests of the north-central U.S. This region's harsh, cold climate and marginal soils produce the slow-growing, tight-grained oak Seguin Moreau requires.

Seasoning for two years exposes the staves to the elements which removes naturally occurring harsh "green" tannins. The staves are carefully raised, bent, and slowly toasted over small oak chip fires to caramelize the natural wood sugars and release desirable compounds.

Seguin Moreau's commitment to quality and customer satisfaction continues even after the barrel leaves the cooperage.

For more information, contact:
Seguin Moreau USA, Inc.
151 Camino Dorado, Napa, CA 94558
tel: 707/252-3408; fax: 707/252-0319

Please see our ad, page 77.

VINCENT BOUCHARD, BARREL BROKER

Vincent Bouchard represents Les Tonnelleries de Bourgogne — an association of Tonnellerie Damy of Meursault, Tonnellerie Billon of Beaune, Tonnellerie Vicard of Cognac, Tonnellerie Lafitte of Cognac (managed by Vicard), and lastly Tonnellerie Cadus. Cadus is a newly organized partnership of Maison Louis Jadot of Burgundy, Tonnellerie Vicard of Cognac, and Vincent Bouchard, a ninth generation Burgundian enologist.

Les Tonnelleries de Bourgogne is highly respected by producers of Chardonnay and Pinot Noir. Damy and Billon strongly believe in respecting forest origin in sourcing staves, as each forest has its own specific characteristics.

Tonnellerie Vicard is the first cooperage operation to be officially certified by the Bureau Veritas International (BVQI) for *both* 100% 32- and 36-month air-dried staves *and* the barrel fabrication process.

Tonnellerie Lafitte, managed by Jean Vicard, specializes in the production of high quality Bordeaux barrels from hand-split Hungarian and American oak. Lafitte produces Hungarian oak barrels made from staves seasoned three years for a unique sweetness in the

developing wine. For its American oak production, Lafitte has adapted traditional French coopering techniques to include a long, slow toasting over oak fires for maximum heat penetration.

Tonnellerie Cadus was conceived to meet the increasing demand in France and worldwide for *ultra premium* barrels. Three-year air-dried wood will be used exclusively. Two different house toasts are available, depending on the desired maturation period of the wine in barrel (for fast versus slower development).

For more information, contact:
Vincent Bouchard, Barrel Broker
or Roberta Manell-Montero
PO Box 2322, Napa, CA 94558
tel/fax: 707/257-3582 or tel: 707/226-7466
Please see our ad, page 58.

TONNELLERIE BOUTES

Boutes Cooperage, located in Vayres right in the heart of the Bordeaux region of France, has been providing fine French oak barrels to wineries in the U.S. for 15 years. The owners of Boutes, Henri Barthe and his two sons Eric and Pierre, are in complete control of production. They begin by purchasing standing oaks at the National Forestry Department auctions in Allier and continue with milling, seasoning, toasting, and final shaping of the barrel.

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Air drying of 18 to 24 months includes a special water-soaking method unique to Boutes that is performed during the early stages of wood maturation. The staves are removed from the drying yard and placed in concrete holding tanks. The tanks are filled with fresh water completely submerging the staves. There the staves can remain for up to two months. This soaking process is designed to uniformly leach out the harsh tannins of the wood and leave behind only the soft desirable tannins.

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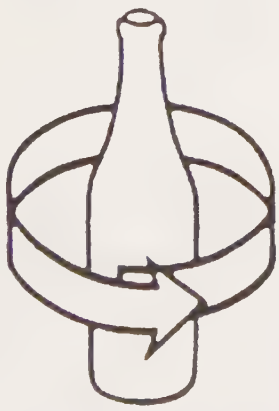

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For more information, contact:
Tonnellerie Boutes
Ken Seymour
2320 Creekside Rd., Santa Rosa, CA 95405
tel: 707/542-1158; fax: 707/544-7684
Please see our ad, page 54.

TONNELLERIE MERCIER

From a family of viticulturists, Francis Mercier founded his cooperage in 1960. This long-time master cooper oversees production of almost 10,000 barrels each year in the workshop in Barbezieux, a village between Cognac and Bordeaux.

Relying on traditional French coopering methods, Mercier selects the oak from the forest of Allier, Nevers, Vosges, and Limousin. The staves are hand split, and the oak is air dried for 20 months. The barrels staves are bent and shaped very slowly over an open fire. After the barrel is formed, it is toasted to a deeply penetrating caramelization, producing an exceptionally rich and flavorful barrel.

The toast level (medium, medium-plus, or heavy) is even throughout, enhancing the richness and elegance of the oak flavor without allowing it to overpower the varietal character of the wine.

Tonnellerie Mercier now has its own California sales office and provides a vital communications link between the winemaker and the barrelmaker. Regular visits, tasting, and discussions will ensure everyone of progress in the mutual quest for the highest possible quality of the respective products.

For more information, contact:
West Coast distributor:
Mercier USA, Inc.
171 Spring Grove Ave.,
San Anselmo, CA 94960
tel: 415/453-2069; fax: 415/453-5485
East Coast distributor:
Liliane Recht
Route 2, Box 756, Montross, VA 22520
tel: 804/493-9186; fax: 804/493-0435
Please see our ad, page 78.

CELLULO CO., DIVISION OF GUSMER ENTERPRISES

Winemakers and connoisseurs are well aware of the desirable effects of ageing wines in oak as well as fermenting wines in the presence of oak. Proper oak ageing of wines is still considered an essential part of the traditional art of winemaking. It is the natural extractives from quality white oak wood that contribute to this improved and more complex bouquet and flavor of wine. These desirable oak extractives can be derived precisely and uniformly from Oak-Mor® granular white oak.

Cellulo is the manufacturer and supplier of Oak-Mor® which uses a select white oak, *quercus alba*, chosen for its qualities to enhance and complement flavors and aromas of fine wines. Oak-Mor® comes in four styles: **Regular** — a style with distinct white oak flavor and aroma characteristics; **Special** — a more refined and subtle character than the regular style; **Premium** — an oak considered by many winemakers to have European oak characteristics; **Toasted** — all of the desirable characteristics of a toasted oak barrel, but in granular form.

Wines exposed to toasted oak barrels or toasted Oak-Mor® granular oak extract rich vanilla, butterscotch, and maple characters without a noticeable "oaky" or "woody" character. The proper use of Oak-Mor® granular oak as a supplement to barrel ageing or as a replacement for barrel ageing can enhance the quality of wine at a fraction of the cost of using new oak barrels.

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Phil Crantz
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March/April 1997

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Showcase

A VIEW FROM AUSTRALIA

by Gary Baldwin

Every successful large company develops a corporate plan or policy document outlining strategic goals and detailed action plans. This is also true at large wineries, where this plan usually includes a clear vision of the desired wine styles, position in the market, and price points for the various wines.

At its best, such strategic thinking produces the new 'mega stars' in the marketplace — the wines that highlight wine lists at the trendiest bistros in town.

But at small wineries, things are quite different. Most don't have a plan, and as a result, they have only a vague notion of what they are trying to achieve. They say that they "just want to make the best wine possible from the fruit available." That sounds like a reasonable strategy, but is it?

What should be going on in the planning stages at small wineries?

There are three reasons why this philosophy is wrong. It assumes:

- **The winery has little control over the fruit.** If the winery is serious about producing good wine, this should not be the case.
- **The winery has the resources to make the best wine possible.** For resources, read enough good quality oak and the necessary funding to hold each vintage in barrel and bottle for as long as required to achieve the best age for release.
- **That there is a market niche available for that type of wine in the intended market.** Often this is not the case; the trendy bistro wants a light red, for example, while buyers at the wine cellar door are more often interested in an old-fashioned red.

Questions all owners/winemakers should answer:

1. What is your vision?

One of the first things owners/winemakers at a small winery should ask themselves is what they are trying to achieve. They should describe their particular vision for their wine. This step is crucial for owner/winemakers who will benefit from knowing exactly where to go with their wine. While it may seem easy to do, it should be thought through very carefully, as this vision is the basis of how the winery will operate its business and eventually succeed.

2. Consider your fruit

In an ideal world, all the planning has been done well before the vineyard is planted. For a start, this means that the area is planted with the most suitable grape varieties for the soil and climate.

But the ideal world is rare, and more often than not, the vineyard is already in place with at least 10 different varieties, and the wine has already been made for a few years before trouble strikes.

A very small amount of unique wine is relatively easy to sell. But as the vineyard improves, the owner/winemaker discovers that costs are too high, so to reduce the cost per liter, he or she buys more fruit. Production goes up, and before you know it, the winery has a surplus of wine that does not seem to be selling as it used to.

At this stage, the owner/winemaker calls in a consultant who starts asking difficult questions, such as: "Are the varieties suited to your particular area?" "Do the styles of wine you produce suit the fruit available?" "Does the wine fit the market niche into which it is sold?"

3. Consider your sales

This is often where things become difficult. Owners/winemakers often believe "We have to produce this style of wine because it sells well at the cellar door, which provides our cash flow."

That's fine if such sales also provide a profit!

Many of these cellar-door wines sell well because they are priced quite low, but the winery isn't making any profit. Fortunately, this is a straightforward problem that can be addressed quite easily by checking costs and adjusting the selling price. Much more complex is deciding which style of wine best suits the particular vineyard and winery.

4. Consider your style

Recently I talked with a very good Australian winemaker who had suggested to another winemaker that his wines had too much fruit. The second didn't see that as a problem; in fact he was quite comfortable with this situation. A very interesting argument ensued.

It was clear that the very fruity wine was selling very well, and that is what Australia is noted for overseas — big fruit flavors. But the first winemaker argued that the great wines of the

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world have less simple fruit and more subtle flavors, that these wines develop more slowly but are actually more drinkable in the long term.

In my view, both of these opinions are correct.

You can make wine in either of these styles, probably even from the same fruit, and they are both valid. But whichever style you choose to make, you must be fully aware of the implications of your decision.

If you make a wine (oak-aged white) that will age for a long time and has high acid, low pH, a high level of solids in fermentation, and plenty of oak and then try to sell it 10 months after harvest, it may well be a very poor performer in the market.

If, from the same fruit, you make a soft, fruity, up-front style wine with lower acid and little oak and then hold it for three years before selling it, the same problem will arise. The fruit will have faded, and the wine will be quite unpopular.

In either case, the wine will sell, especially if the price is low enough, but it is unlikely to be wine of the month or lead to long-term success for your winery.

The question that owners/winemakers must answer is which style ***they*** wish to make, because there are a great many differences in how you make the various styles, and there are many variations on either of these styles.

5. Consider your customers

Perhaps the most common request from owners/winemakers to consultants is to "help us make a great wine — an oak-aged Chardonnay that should age beautifully for at least 10 years and still be good after 20 years, and oh, of course, we must be able to release it in April after harvest."

After I point out that fulfilling this request is basically impossible, we come to terms with what the owner/winemaker really wants and what can be accomplished under the winery's particular circumstances.

In Australia, the prime directive is "sell the wine as soon as possible to achieve satisfactory financial results." Of course, this is quite valid — after all, reaping financial rewards is usually the main reason we're in business in the first place.

Fortunately, a drinkable young wine is well-suited to Australian viticulture, anyway. Australian climates tend to produce fruit that ripens quickly with plenty of sugar and flavor that allows us to drink wines that are relatively young.

As a result, we seem to have trained the Australian public to enjoy only young, fresh, fruity wines. (Though I can't confirm the figures, I've heard that 95% of wines are consumed within 48 hours of purchase.) I note that if I serve an older wine at a dinner party, the guests will often turn up their noses, especially if they are not "wine" people. They usually think the wine is "a bit over the hill."

The winemaker who hopes to make a wine that is not immediately ready for consumption is confronted with an ongoing problem; if he or she releases the wine before it is ready to drink, the market will drink it early and reject it. The market exerts pressure on the winemaker to avoid making wines that are not ready for immediate consumption.

In conclusion

Of course, there are many shades of gray in this scenario; there can be many different wines in any mixture of wine styles and types, and the owner/winemaker does not have to make all or any of the standard wines.

He or she may be happy enough to experiment with something new that is good, but it is far better that the experiment is carried out with a plan in mind, rather than waking up one morning during vintage and whimsically deciding to make and market a new style this year.

As we work with clients, we concentrate on defining the market for which the wine is intended and then guiding the winery to achieving the desired goal.

Whether you hire a consultant or not, carefully develop a guiding philosophy that drives your wine toward a goal that has been deliberately set for the winery. Whether the goal is correct and achievable can only be evaluated over time. ■

Gary Baldwin is a principal consultant for Wine Network Australia Pty. Ltd., PO Box 1201, North Fitzroy, Victoria 3068, tel: (03) 9/481-8444; fax (03) 9/481-8100, e-mail: gbaldwin@winenet.com.au.

This is an edited version of an article that first appeared in *The Australian Grapegrower & Winemaker*, April 1996.

Funding for research on moderate alcohol use

For the first time ever, a U.S. government agency has awarded grant money for the scientific study of the effects of moderate alcohol consumption on health in a major systematic way.

Late in 1996, the National Institute on Alcohol Abuse and Alcoholism (NIAAA), an arm of the National Institutes of Health, funded 15 research grants related to moderate drinking for a total of $2.74 million.

Most of the one- to five-year studies will investigate the relationship between moderate drinking and heart disease, breast cancer, or bone density (osteoporosis), but they also include studies related to the effects of moderate alcohol use on burn or stroke victims and on hormonal status, as well as on alcohol and medication interactions and mortality.

John De Luca, president of the Wine Institute, an industry trade group in San Francisco, explained that NIAAA was formed by Congress to "address and solve the issues and problems related to alcohol abuse and alcoholism." In a report to members, De Luca said, "The NIAAA's recognition that there can be benefits as well as risks, when scientifically based recommendations are to be made about drinking, reflects its responsiveness to congressional instructions to pursue scientific frontiers and foster greater knowledge."

De Luca stated that this new approach by NIAAA indicates a shift toward a more "enlightened" view of alcohol products developing in official circles.

Elisabeth Holmgren, director of the Wine Institute's Research and Education Department, added "Never before has a government or private agency funded research of this scope on this issue. The new data this NIAAA research program will generate will further clarify why moderate wine consumption can be part of a healthy diet and lifestyle."

Holmgren reported that her department has played a major role in advocating for new government-funded research studies on moderate wine consumption and health. The Research and Education Department has consistently tracked and promoted newly emerging research findings to NIAAA officials and other policy leaders and the media. These efforts have contributed to more favorable U.S. alcohol policy decisions such as this new NIAAA research grant program.

If these 15 studies continue to be funded at current levels as proposed, NIAAA will provide nearly $10 million for these studies over the next five years. Indications are that NIAAA will also consider new proposals and fund additional grants during this period.

Only one of the studies will investigate health differences that result from moderate use of different types of alcoholic beverages — wine, beer, or spirits. The rest do not distinguish between the effects of different beverages.

De Luca expects that many of the studies will yield results that will illustrate the positive effects of moderate alcohol use. Some of the others will look into biological factors which may identify people who should not drink.

De Luca stated that this shift to a broader national science policy on alcohol resulted from new congressional appropriations language called for in a law signed by President Bill Clinton. "The language urged the U.S. Departments of Agriculture and Health & Human Services to develop a working strategy to ensure future research on the impact of moderate alcohol consumption."

De Luca and other leaders in alcohol-related industries have been working for many years to influence government policy toward a recognition of the benefits of moderate alcohol use. They point to the new grants as an indicator of the success of their efforts. "Wine Institute has been at the forefront in advocating a more fair allocation of federal research funds for wine specifically and for alcohol in general," De Luca said. "The new research grants, modest as they are, represent a milestone in the evolution of our industry in America." ■

NIAAA major areas of study

1. Cardiovascular Disease. Studies will investigate these four areas:

a. Alcohol's role in myocardial recovery and survival after a coronary event.

b. Alcohol's protective effects against heart disease, which include favorable changes in heart muscle cells that reduce the risk of injury from ischaemic heart disease.

c. The use of new immunosorption techniques to refine measurement of the effects of alcohol on high density lipoproteins (HDL) with specific focus on two functions of HDL that help prevent atherosclerosis.

d. Beverage-specific effects on stroke.

2. Osteoporosis. Studies will investigate alcohol's effects on bone cell turnover and bone density, as moderate consumption may prevent osteoporosis in certain age groups.

3. Women's Health Issues. Studies will investigate the effects of alcohol consumption on estrogen levels and other health parameters in post-menopausal women.

4. Medications/Supplements. Studies will assess the impact of alcohol/drug interactions on mortality among the elderly and the effect of alcohol on beta-carotene supplementation, a common practice among Americans.

5. Overall Health Status. One of the largest studies will use an animal model, highly regarded by the scientific community for its reliability, for a five-year investigation to assess the effects of moderate alcohol consumption on coronary heart disease, breast cancer, and osteoporosis.

by Dr. Richard Smart

GDC works wonders

Recently I wrote a tribute to Professor Nelson Shaulis of Cornell University (***PWV***, July/August 1996) who developed the Geneva Double Curtain (GDC) in the early 1960s.

That article lamented the fact that the GDC has not been widely adopted, especially in the U.S., its country of birth. Imagine my delight to recently interview one of the leading growers on California's North Coast who was glad to share his successful experiences with the system.

I had not realized that the GDC has been so thoroughly evaluated and now commercially used on the North Coast and am pleased to report on its performance. The following is from an interview with Andy Beckstoffer and John Crossland, respectively president and vice president of Beckstoffer Vineyards, Napa Valley, CA.

Beckstoffer Vineyards

We need to put the Beckstoffer operation in some perspective, to see why GDC became the system of choice in 1989. Andy Beckstoffer is one of the largest private growers on the North Coast, with vineyards in Napa and Mendocino, and runs his company with some firm ideas based on awareness of the role of the private grower in the industry. Independent growers must be profitable in their vineyard operations, unlike winery-owned vineyards where some cross-subsidy can occur.

"There are two things important for profitable vineyards," says Beckstoffer, "good quality to keep the customer satisfied and the grape prices sufficient, and also good yields to ensure sufficient income to cover costs."

Beckstoffer was farming 1,000 acres of vineyards in 1988, when he purchased a historic 225-acre Rutherford, CA property. Along with the old vineyards on the property came problems with phylloxera and nematodes carrying fan leaf virus. Replanting was necessary and, acting on advice from Andre Tchelistcheff, former winemaking consultant, the decision was made to replant with Cabernet Sauvignon, using a range of clones.

Meeting of the minds

How to trellis the new vineyard was a big issue. The rootstock choice was automatic, since the University of California had performed early experiments on rootstocks on the property, and the stock 039-16 had been just released and was suggested for high-nematode-pressure sites. This rootstock was considered vigorous, and backhoe pits confirmed deep soils and thus high potential vineyards. New vineyards of high vigor were expected.

To resolve the trellis question in 1989, Beckstoffer and his team drew together some of the most experienced viticulturists available, including Dr. Phil Freese, Michael Silacci, and Diane Kenworthy from industry, and Dr. Nick Dokoozlian from the University of California. These persons reviewed recent research (especially that of Professor Mark Kliewer and myself) and commercial experience, and discussed the advantages and disadvantages of different systems.

In the late 1980s, canopy division was widely accepted as the most economical method to overcome high vigor and produce quality fruit from vigorous vines. At the time, there were two divided canopies in vogue, the lyre and GDC. The lyre was developed in Bordeaux by my good friend Professor Alain Carbonneau. This system had been widely promoted by Carbonneau and others in California, and already there were some significant commercial installations.

The GDC, developed in New York State in the mid-1960s by Shaulis was less well-known, although Kliewer had some impressive results with a modified form at the Oakville, CA, Experiment Station. Yields were high, more than 10 tons per acre, and quality was very good, as demonstrated in reserve wines by a local winery.

GDC the winner

In the end, the choice was easy. GDC was the cheaper system to set up and also the downward shoot positioning offered substantial devigoration. It has been known for a long time that downward-pointing shoots grow at a reduced rate compared to those growing upward, no doubt related to the vines' evolutionary habit of growing up trees. Also the GDC could be more easily mechanized than the lyre, especially for harvesting and pre-pruning.

Planting began in 1990, with 11-foot wide, north-south rows and vines spaced six feet apart with 42-inch crossarms for the GDC. The Beckstoffer team soon learned the virtues of downward pointing spurs to assist downward shoot positioning.

Training procedures were soon modified by experience. Rather than divide the vine both at the trunk to form two arms, then again at the fruiting wire to form two cordons, the vines were modified by training to only one side (see drawing), with only three cuts necessary in training. (The author would recommend only one, but that is a story for another column).

Winery-customers were not always convinced about the new training system. Of course the reputation of GDC for high yields caused consternation, this being a well-known sensitivity of most winemakers. Beckstoffer's response has been to ask the winemakers to make an assessment of the fruit and wine and not worry about the yields.

The Beckstoffer philosophy is to invite winemakers into the vineyards to see how the fruit is being grown and comment on practices. As a further quality assurance mechanism, Beckstoffer is hiring his own winemaker to ensure that all vineyard decisions are oriented toward quality. To date the fruit has been of reserve quality and so expectations are high. Of course, the GDC system has been found to improve quality in other countries, and so this result is to be expected.

Other modifications to vineyard practice have been necessary to adopt this new system. Sprayers are changed to direct the spray down from the top, but this is a minor modification and allows for better spray coverage. Shoot positioning has been made easier by using down-raking foliage wire along with downward facing spurs, as shown in *Sunlight into Wine.*

Conclusion

We need several years more experience before the GDC system can be given the unequivocal thumbs up. However, performance in the first few harvests has been most encouraging, with the vines in better balance and with better yields and quality than adjacent vineyards.

The Beckstoffer team has no doubt that GDC is the system of preference for high-vigor sites, and performance is much better than for vertical shoot positioned (VSP) canopies which are probably being adopted too widely on high potential sites elsewhere in California.

Labor requirements for GDC have been found to be less than for VSP. Using the rake wire for shoot positioning, GDC requires about 11 man-hours per acre. This cost is 30% less than for VSP operations of shoot positioning and leaf removal. Though 1996 was a bad season for sunburn, with several heat spells over 100°F., when shoot positioning was done properly with GDC there were few problems. Well-balanced GDC vines produced better quality than poorer balanced non-divided canopies at less than five tons per acre.

(L to R) Mike Wolf, Andy Beckstoffer, John Crossland, and Frank Villanueva in a GDC vine row.

Of the 225 acres at the Rutherford property, 150 were planted with GDC. In the 1996 harvest, depending on soil type and clone, 50 acres yielded seven to eight tons/acre, and another 100 acres, limited by clone, set, and climate yielded five-plus tons/acre.

I visit few independent grapegrower offices where the prestigious wine magazine *The Wine Spectator* is evident. There are few independent growers who run a vineyard quality assurance program in their quest for quality, using for example, measurements of the yield-to-pruning weight ratio as a guide to vine balance. Both are true at Beckstoffer.

I salute Andy Beckstoffer and his talented team for their bold initiative in adopting the Geneva Double Curtain. I expect they will become the more famous for their promotion of the home-grown, "All American" training system which I am sure will become more widely used in the future. ■

Dr. Richard Smart, "the flying vine-doctor" is an international viticultural consultant, contactable in Australia by fax on 0011 61 65 84 0121, or by e-mail on smartvit@midcoast.com.au. He visits America frequently and can be contacted at Vinquiry in Healdsburg, CA on phone 707/433-8875.

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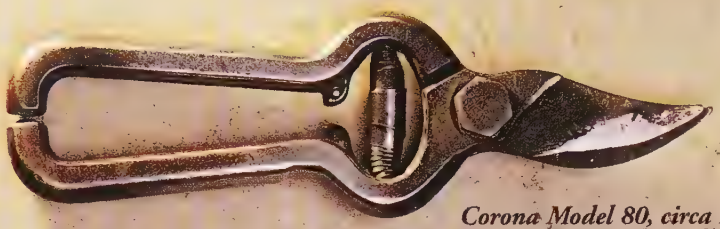

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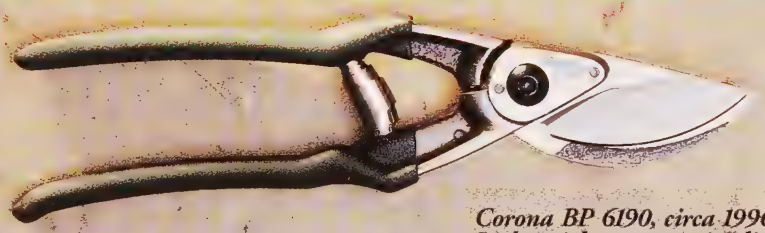

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by R. Corbin Houchins

How the cat keeps its skin

Alternative distribution remains a front burner issue in the wine industry.

Everyone seems to recognize that change in distribution patterns is inevitable and potentially beneficial, but there is no consensus on how to skin the cat. Most progress in the summer of 1996 came from updated versions of four-tier distribution, melding guerrilla wholesaling and retailing concepts with modern electronic transaction management to counter the widespread prohibition of direct shipment to consumers. It's a good example of working change without challenging a system at its roots.

Not everyone has run for the middle ground, however. Last fall I received the manifesto of the Coalition for Free Trade in Licensed Beverages, which eschews end runs for frontal assault. (I believe the document arrived by fax, but from its revolutionary tone I could believe it was wrapped around a rock thrown through the window.) Certainly the rhetoric is exhilarating:

> At the urging of liquor monopolists, state regulator after state regulator has invoked archaic, prohibition-like, laws to deny consumers the right to exercise free choice of product selection and convenient ordering and delivery services. ***The time to fight back has arrived.*** It is a violation of the US Constitution for a state to discriminate against interstate commerce solely in order to protect local economic interests.

The Coalition goes on to assert that it has proposed a model interstate shipment law, and that "if state regulators and liquor monopolists refuse to cooperate in reform efforts, the solution will be found in the courts."

Heady words. As one who can't see any compelling reason to make table wine more difficult to order than cured hams, I'd love to see the bastions of restricted commerce stormed by popular uprising.

Have we got enough rocks?

But *is* it unconstitutional for states to forbid consumers to purchase wine except from state-licensed retailers who have bought it from state-licensed wholesalers?*

Maybe so. The courts have come a long way from the immediate post-Repeal viewpoint that the power to exclude wine altogether implies the power to let it in on almost any terms. The federal constitution (a relatively short document, by the way, that I recommend every citizen read from time to time) gives Congress power to regulate trade with foreign nations, among the states, and with tribes of indigenous peoples, as well as other enumerated powers, and reserves the rest of governmental power to the states.

Enumerated congressional powers have been read quite broadly, placing significant limits on state power in areas where the constitution implies federal supremacy. Among the acts relatively recently recognized as constitutionally forbidden to the states are restricting dissemination of truthful information about prices, affording local residents price benefits that affect commerce in another state, taxing locally produced goods at a lower rate than those from out of state, and requiring licensed beverage businesses to engage in price agreements that violate federal antitrust laws.

To win a suit against enforcement of a state liquor law, you must show that the interests protected by free flow of goods in interstate commerce outweigh in the judicial balance the interest of state governments in controlling availability of beverage alcohol within its borders as they see fit. Success or failure is highly dependent on the skill and luck of the plaintiffs in developing the factual record, as well as on the predilections of the judges who decide the case. Depending on how those competing interests are presented and weighed if and when they come before a court, the legal framework of the mandatory three-tier system may indeed be found unconstitutional.

Let's say it will be. What then?

Huffing, puffing, etc.

Before a court actually speaks, how likely is the threat of litigation in a gray area to produce repeal of the three-tier laws?

History does not support optimism about repeal of state laws that have not been judged invalid by a court of that state or by a federal court with jurisdiction over it. Rather, the norm is to cease enforcement only in response to a court ruling and only after some considerable foot-dragging, often leaving the invalid law on the books for decades.

Assuming three-tier laws are adjudged unconstitutional, states would still have right to protect legitimate interests, for example in monitoring taxable goods. What measures could constitutionally be taken to achieve those permissible goals, and how friendly or unfriendly they might be to direct shipment, would be a state-by-state political issue.

Political battles over wine distribution have classically divided into suppliers versus wholesalers, with occasional divisions between large and small wineries or between conservative and progressive distributors. In this instance, distributors have already begun to exhibit differences depending on whether they see hybrid delivery systems, such as licensee "clearing" of electronically ordered lean-inventory goods, as an opportunity or as a threat to the divinely ordained three-tier model.

Distributors are less divided in their negative reaction to simply letting the goods find their way from willing seller to willing buyer with minimal governmental intervention, for the understandable reason that their previously protected businesses would then have to provide value or fail, like everyone else's in a free enterprise economy. As with the increasingly legendary family farm, survival of the local distributor has long partaken of the public interest as expressed in legislation.

*To keep the terminology straight, I'll use the phrase "three-tier system" to mean a *legal* requirement that requires wine to go from the primary source (ordinarily the winery or the importer) to a wholesaling business located in, and licensed by, the state, and thence to a retailing business located in, and licensed by, the state, before it can be sold for consumption. A free market might have three tiers for objective economic reasons, but that would not be a three-tier system as the term is used here. For example, the state of Washington allows its wineries to sell directly to retailers, abandoning the three-tier system except for out-of-state products, but most wine is still sold through wholesalers. In some cases four or five tiers make economic sense, in some cases one or two. It's not the role of wholesalers that is at issue, but only the public interest in letting market forces configure the channels of commerce.

While the Coalition program addresses such generally recognized interests as consumer demand for product choice, limiting sales to adults, audited collection of taxes, and identification of sellers, it does not attempt to preserve the guaranteed turnstile in the stream of commerce that distributors have enjoyed since Repeal. Instead, true to the historical model of calls to the barricades, it envisions a post-revolutionary society where previously antagonistic interests are united in brotherhood.

According to the free trade manifesto, distributors, freed of the burden of dealing in specialty wines, will improve their lot by concentrating on the major brands, whose suppliers continue to derive benefit from the three-tier system. Moreover, direct distribution will allow small brands to grow into distributor-dependent large brands, rather than languish in back of the books of wholesale houses that have to concentrate on volume wines to survive, thereby providing even more honorable labor for distributors.

Those already comfortable with the status quo might be excused for reluctance in embracing the Coalition's predictions. Much will depend upon whether the tiny fissure in the wholesaler ranks between defenders of the old and adapters of the new that modified three-tier distribution has produced can be extended to the debate on direct distribution. Any analysis of the Coalition's evolve-or-we'll-sue brand of economic Darwinism has to take into account the possibility of a vigorous defense in court and in post-litigation lawmaking.

A technical consideration

In the lobbying donnybrook that would follow judicial invalidation of three-tier laws, the range of possible substitute laws would depend on the reasons the court gave for its ruling. If unconstitutionality of a three-tier law is based on discrimination against interstate commerce, all the state has to do to fix it is repeal any right a local winery may have to sell directly to consumers. If every bottle of wine, irrespective of origin, has to go through a wholesaler and a retailer on the same terms, there is no discrimination.

To avoid the non-discrimination trap, an effort to invalidate three-tier laws would have to win on the grounds that specifying the channels of commerce in that way is too burdensome on interstate commerce, whether it's discriminatory or not. Unconstitutionality based on absolute, rather than relative, burdens on interstate commerce presents a higher hurdle. Historically, litigants have cleared it only by showing the burden is "clearly excessive" as compared to the public benefit of the state law.*

*Whether a scheme may be "monopolistic" in some sense is not determinative. State requirements, such as limits on the ability to change prices, that would violate the antitrust laws if agreed to by individuals without legal compulsion may be constitutionally permissible if the state adopts them as an articulated policy and oversees their operation.

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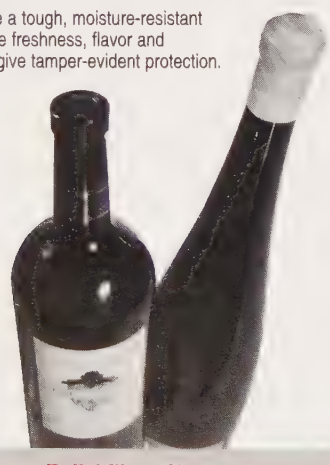
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On the plus side, the present composition of the Supreme Court appears congenial to pro-commerce arguments and relataively unfriendly to government in the role of parent. Anyone handicapping the issue can't ignore, however, the persistent image of wine as a product justifying a high level of control.

All together now

Let's be optimistic and assume a full score win in court, resulting in repeal or non-enforcement of the state three-tier laws. How likely are the states to adopt a nationally uniform law of interstate shipment to take their place?

In the 1970s, a uniform licensed beverage law formulated by a panel of distinguished experts under the aegis of a famous university, and clearly superior to the patchwork it was intended to replace, was proposed and quickly dropped out of sight.

Uniformity failed in basic beverage regulation law because the liquor codes are made by state legislators with an eye on the needs of their constituents, among whom local wholesaler organizations are usually prominent. One should be mindful, also, that major suppliers in all lines of goods are reluctant to support, either directly or through their trade associations, a lobbying effort that is not essential to protect their basic interests and is strenuously opposed by wholesalers on whom they rely.

Rear-guard opposition to free trade would likely take the form of state-by-state formulation of phase two distributor protective legislation, designed to test the inevitable ambiguities in whatever decision might have invalidated phase one. For example, unless the controlling judicial opinion were uncharacteristically clear, we could count on individualistic methods of writing into law the proposition that only brands no distributor can profitably handle could be distributed directly. Moreover, a court decision protecting interstate commerce would not prevent enactment of additional restrictions on intrastate distribution.

Counter-revolution

Any ground-breaking lawsuit is followed by one or more rematch lawsuits that could undercut, reinforce, expand, reduce, or otherwise fundamentally alter the result of round one. Nor can revolutionaries assume that the established powers will sit by while mobs assemble in the street.

Wholesalers have already floated a federal legislative proposal that would enact for wine something like the famous "penultimate clause" that cedes primary regulatory authority over beer to the states. Such a law might provide that under its undoubted authority to regulate liquor, Congress has determined that the general welfare requires a middle tier of distributors maintained in business more or less as if they were franchisees, but that Congress cedes to the states the manner in which that requirement will be implemented.

What course of action does all this speculation suggest? To me, it seems that the long term interests of the industry are best served by a multiplicity of approaches.

We need both Whigs and Jacobins in the struggle for more effective distribution. Even if the dreams of firebrand revolutionaries were inevitably doomed (which I don't think is the case), they would have the salutary effects of moving the

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center of debate toward change and forcing counter-revolutionaries to expose their reasoning. The worst thing wine suppliers could do is factionalize by calling each other's proposals too conservative or too radical without respectful forethought.

Heat vs. light

On the other hand, a little healthy debate couldn't hurt.

Not long after I received the Coalition for Free Trade manifesto, one of its adherents wrote to ***PWV***, taking me to task for suggesting that alternative distribution threatens the three-tier system (as well as for various stylistic and intellectual shortcomings). His key point is that the Coalition's proposals present no challenge to the three-tier system, but "only to the monopoly system currently enjoyed by American wholesalers."

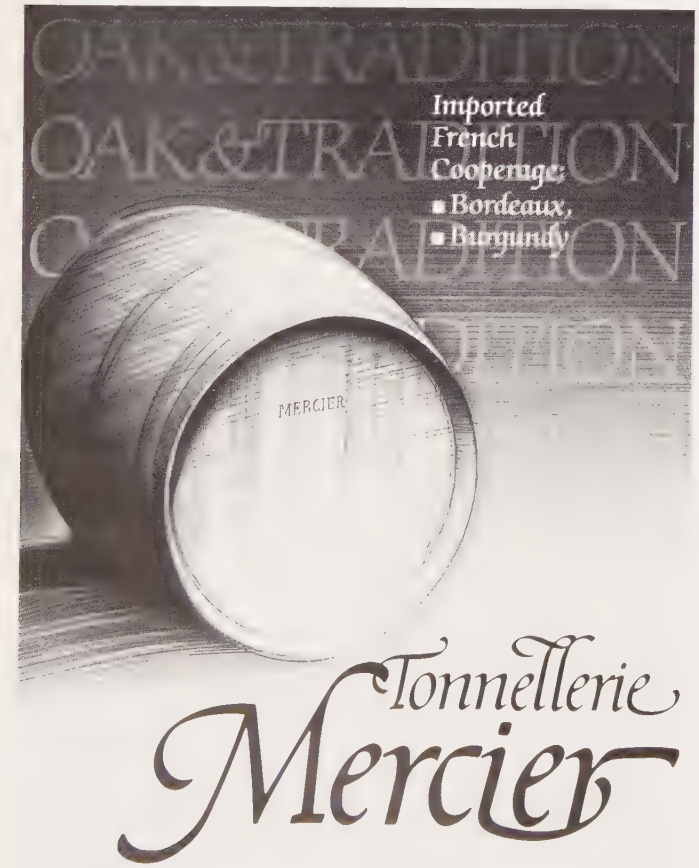
I take the writer's point that a free market would not threaten wholesalers who add economic value commensurate with their markups. What I may not be saying clearly enough is that those wholesalers, who would, as the Coalition says, do just fine in an unregulated market, by and large don't see themselves as threatened by the status quo, either. Thus, it doesn't seem to me they would act as much of a counterweight to their colleagues who either know they live by the grace of government intervention or don't want to bet their companies against that possibility. It's the latter group that has been so successful at *extending* the "monopoly system" with so-called franchise laws in numerous state legislatures over the past few years.

Those interested in the topic can find a variety of opinion in current media. Jerry Mead debated Walter Haimann of Llano Estacado in print, more on the desirability and feasibility of getting rid of three-tier laws than on the likelihood of success.

Meanwhile, Virtual Distribution, Inc., put out a release pointing out benefits for wholesalers who participate in their four-tier system (which was a topic in the last two columns here) and offering advice to wineries on how to calm their distributors' fears. At the risk of more brickbats, I'll invite anyone who wants leads to sources of partisan information to write the Editor or send me e-mail at RCH@netbox.com.

How is a winery, facing the necessity to plan for distribution over the next few years, to evaluate the relative benefits of establishing long-term relationships with middle-tier businesses or adopting some mix of alternative methods? And how much time, energy and money should wineries, individually or collectively, devote to efforts to bring about change?

Unfortunately, decisions about wine distribution require guesses about the merits and probable fates of economic, legal, and political theories that are only beginning to do battle. At this point, I don't see any better way to make those guesses educated than to analyze as carefully as possible the events that would have to occur to produce a given



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result, with reference to what has happened before in analogous situations.

Terroir Terror

Among the features of trademarks that make them a fascinating analytical subject is their schizoid nature, embodying features of both private property and public good. As intellectual property, they are assets that can be evaluated, bought, sold, improved, *etc.*, like other kinds of property, while as instruments of economic policy they convey information and avert consumer confusion, permitting the free market model to function as intended.

Another device, recently recognized as a species of intellectual property, is the "indication of origin." It, too, appears to serve the dual role of providing a proprietary benefit and aiding the interchange of information required by the market. The proprietary benefit is not, however, that of an outright owner, but of a group with a common interest in conveying that their goods were produced in a particular place, as distinguished from all other goods in the universe. Hence, "Bordeaux" is not merely a geographic location, but in the context of a wine label an indicator of origin in which producers located there have a legally recognized interest.

Geography and trademarks converge in several ways. A geographic reference may be a trademark in itself when used non-descriptively, as in "Chicago" for roller skates. Even if it is descriptive, and therefore ineffective in itself as a trademark, a geographic reference in combination with other elements may make a valid mark, as in "New York Life" for insurance issued by a company located in that city, although the lack of exclusive rights in the individual parts of the mark make it weaker than an arbitrary or coined word. (We will save for another time a discussion of weakness and strength in trademarks and the complex interplay among indications of origin, appellations of origin, geographic designations, geographic certification marks, and related concepts.)

Microstorms in the microclimate

Recently a dispute arose over the significance of the word "Rutherford," which is, of course, the name of a town in the Napa Valley of California associated with the "bench" where highly regarded vineyards are located.

A program to the players in the contest would identify 1) a group of wineries near Rutherford that use grapes from that location, 2) a group within that group that has adopted brand names or trade names incorporating the word "Rutherford," 3) two Napa Valley wineries bottling for 4) a volume producer located outside the area, with a brand name that also incorporates the word "Rutherford," and 5) the Bureau of Alcohol, Tobacco & Firearms (ATF), which has regulatory authority to prevent bottling or sale of wine with misleading labels.

At this point, the nub of the dispute is use of the geographic reference as a brand name for wine by a producer making no explicit representation that the wine is from Rutherford area grapes. We'll have to wait and see how the issues sort out before drawing conclusions, but some useful

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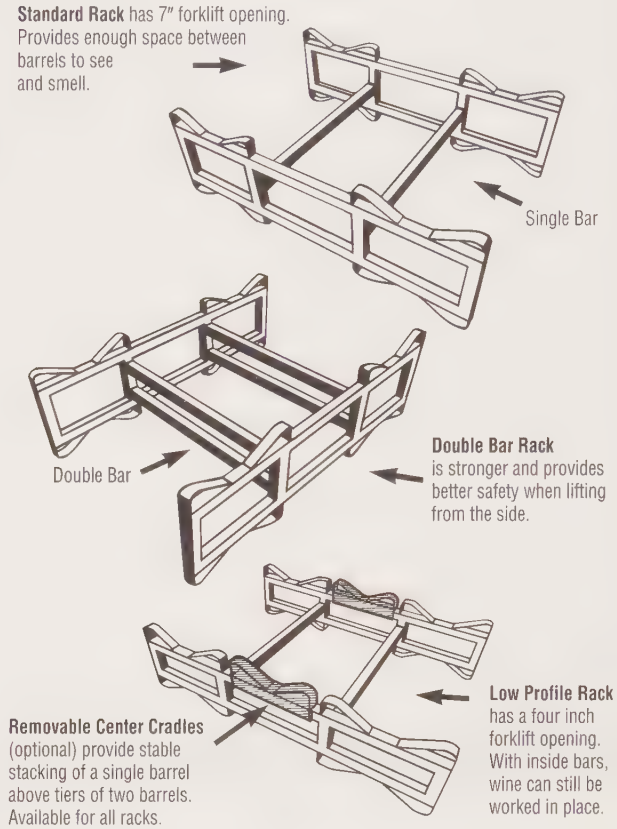
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points appear at the preliminary stage:

First, regulatory agencies tend to respond to complaints in areas where they might not take an enforcement initiative. In this case, offended parties wrote to ATF, which ordered the bottling to stop while it decided whether the controversial label were misleading.

Second, you are more likely to elicit complaints from competitors about sharp competition (obvious), and more likely to lose in court or before an administrative agency (perhaps not so obvious), if you rub it in. The upstart in the Rutherford case was publicly irreverent about the *terroir* claims and the names of the local producers. A direct attack, even a humorous one, that might diminish the public image of a trademark has lent pivotal weight to more than one application for a preliminary injunction by a competitor sore enough to go to court.

Third, there is much inconsistency among labels in the market with respect to whether geographic suggestions in the brand name amount to implied claims about the content of the wine. The ATF regulations provide for either denying approval to brand names with the tendency to confuse consumers, or, if possible, averting confusion by requiring the winery to add the word "brand" to the label. The latter option is, naturally, enough to make a label designer swoon, so one seldom sees it on the shelf.

As with any ambiguous situation of long standing, a dispute among industry members with potential for introducing regulatory clarity could be a cloud on the horizon for some.

Government as we know it

In line with my policy of noting any positive development in the mind-numbing mass of governmental regulations affecting wine, those who are raising capital or organizing management structures for vineyards or wineries can raise two cheers over the enactment of California Senate Bill 632. The new law accommodates limited liability companies in the licensing process by relieving members who are not part of management and who invested under ten percent of the capitalization from providing the state with detailed personal and financial information. ■

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by D.R. Storm, PhD. P.E.

THREADING THEORY AND OTHER METAL-CONNECTING TRIVIA

Only machinists, mechanics, and plumbers feel comfortable in the strange world of threads — not wearing-apparel threads, but screw, bolt, and pipe-fitting threads. One threading system that has always baffled civilization is the so-called reverse thread or safety thread. These counterclockwise "on" and clockwise "off" arrangements are found in the industrial world in a wide array of applications, some not usually seen by even the most discerning observer.

Securing nuts on fans, propellers, and other high speed rotating machinery are often of the reverse-type, just to add a factor of safety. If the rotation is counterclockwise, the safety logic is that it is not in the same direction as the off-motion of the nut. For reasons known only to the liquid petroleum gas (LPG) industry, the threaded connection to a fork lift fuel line, hot air balloon burner system, and the LPG-fueled backyard barbecue is also safety threaded.

For other unknown reasons (if any reader can shed light on the rationale for changing the threading specifications for LPG tank valve connections, please call or FAX me at FAX: 916-795-1119 or tel: 916-795-3506), it is now code-approved to have a near-revolutionary "conventional thread" LPG fuel tank connection.

As the conversion is voluntary and not mandated, the impact upon wineries, hot air balloonists, and barbecuers is probably insignificant. One innovative feature of the thread evolution is the adaptive device that has been contrived in all its simplicity to allow the painless conversion.

The QCC-1 retro cylinder valve adapter for a forklift LPG tank has a "sacrificial" semi-brittle, resin (plastic) wrench head that, when torqued to the required closure force, breaks off so that the conversion cannot be reversed without destroying the tank valve assembly.

The winery's forklift maintenance person should have some ego-building moments, if he or she can attract a crowd for the drive-nut-breaking conversion event. Your local LPG supplier can provide further leads on acquiring the fitting or the manufacturer can be contacted at:

Marshall Brass, 450 Leggitt Road, Marshall, MI 49068

California leaps forward; Industrial graywater recycling guidelines approved

Statutory History

A previous "Winery Water & Waste" column discussed enactment of laws regulating the reuse of residential/domestic graywater in California (***PWV*** Sept/Oct 1995, pp 65-66). Graywater is defined as the sewage from so-called graywater fixtures (sinks, bathroom washbasins, showers, clothes washers, etc.). The new California graywater statute ***excludes*** wastewater from food service (kitchen) sinks and dishwashers from the graywater classification.[1]

Blackwater is the discharge from toilets and urinals. Unfortunately, winery process wastewater, *i.e.*, industrial wastewater, is not classified as graywater, although the law would appear to allow inclusion of some portions of a winery's wastestream.

Some components of the winery process wastewater stream might meet the definition of graywater, as described in Section G-2 of Reference (1) . . . "and other wastewater which does not present a threat from contamination by unhealthful processing, manufacturing, or operating wastes."

As suggested in the previous column on this subject, to have an existing winery take advantage of the graywater technology might require an initial capital investment that would far exceed any benefit. The excessive construction cost increments would occur because of the necessity to re-plumb the winery's sanitary sewer system to separate blackwater from the potentially recyclable graywater.

However, the law is good news for wineries that wish to expand but are at the limit of their capabilities because of wastewater constraints and for new wineries in the planning stage. At new wineries, designing separate plumbing systems to isolate graywater may be both cost-effective and practical, particularly if the prerequisites for subsurface disposal on the winery site are near or at the margins of acceptability. California wineries can take advantage of the law by applying to their county environmental health officer.

Although the California industrial sanitary graywater statute may be the first of its kind in the U.S., there will be a strong precedent for other states to follow suit, as the law merely amends the adopted state version of the Uniform Plumbing Code which details the graywater system design guidelines. [Appendix G, Title 24, Part 5 California Administrative Code (aka: The California Plumbing Code)][1]

Industrial graywater design features

Section G-6, Subpart (b) provides the design criteria for ***industrial*** (read winery) graywater systems.

The quantity of graywater (gallons per day) discharged must be supported by water-use records, as that value is the basis for the size of the subsurface soil absorption disposal system. The design guidelines are very clear in specifying that only the approved graywater design flow quantity be permitted for discharge to the subsurface disposal system each day. Any excess must be automatically bypassed to the blackwater system for disposal.

The two types of acceptable disposal systems are:

1. a subsurface drip system (see previous ***PWV*** column Nov/Dec 1994, "Trickle Systems [aka drip]; Subsurface wastewater disposal with a new twist,") or

2. a so-called "mini-leachfield" system, which resembles in some respects a shallow-trench pressure distribution system (STPD) also described in previous ***PWV*** columns.

Both of the disposal alternatives are intended to provide irrigation to landscape plants, shrubs, and trees. Thus, a winery situated in a non-Mediterranean-type climatic zone would find it difficult to meet the graywater design specifications. If summer rainfall is sufficient for the necessary landscape water requirements, the subsurface graywater program could not be justified. The guidelines clearly prohibit the use of graywater irrigation for vegetables that are destined for human consumption.

As in any subsurface wastewater disposal system, the permeability of the soil, soil depth, and depth to seasonal groundwater all must meet certain minimum design criteria for graywater disposal performance to be acceptable over the life of the project.

The civil/sanitary engineer hired by the winery to implement a graywater program should be familiar with the design of soil absorption systems.

Information sources

For California wineries, the design guidelines are now a matter of record and can be obtained by written request from:

Marsha Prillwitz
Water Conservation Office
State Department of Water Resources
PO Box 942836, Sacramento, CA 94236-0001
Tel: 916-327-1620

Wineries in states outside California, whose responsible agencies have not as yet embraced the new technology, might be able to accelerate the legislative process by offering the California statute as a model. ■

David Storm is a consulting civil and sanitary engineer specializing in the planning and design of winery utility systems. He is also the owner of Winters Winery and the author of "Winery Utility Systems: Planning, Design, & Operations."

References

1. Graywater Systems, App. G, Title 24, Part 5, California Administrative Code (Sections 1-3).

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Guerrilla persuasion

All guerrillas know that marketing is a fancy word that means selling, and selling is a fancy word that means persuasion. If you can't persuade, you can't sell. If you can't sell, you can't market. Persuasion is a crucial talent if you have a wine industry business and enjoy food, clothing, and shelter.

Many people, who fear they can't succeed at marketing because they think they can't persuade, seem to do a dandy job of persuading their spouses to be on time, their kids to do their homework, and their associates to accept the idea they've just put forth. The moral: there are a lot of closet persuaders out there.

In order to rev up their powers of persuasion, guerrillas need two kinds of insight: insight into their prospects and customers combined with insight into their own product or service. Without these insights, you're a dead duck. With them, you're a guerrilla, poised for victory and profitability.

Guerrillas have taken the time to know who they must persuade and to be aware of the things that are important to these people, and they have discovered that persuasion can be straight forward.

Alas, most small winery owners haven't a clue as to the exact person they should be persuading. They don't know the hot buttons that motivate the right people, and they believe that persuasion requires an inordinate amount of pussyfooting.

In *Hitting the Sweet Spot*, by Lisa Fortini-Campbell (The Copy Workshop, Chicago, 1992, 312/871-1179), the author suggests that you take this simple test of your persuasiveness:

1). List the people you tried to persuade yesterday.
2). List what you were trying to accomplish.
3). List whether or not you were successful.

You'll see that not every persuasion attempt works, but understanding why you succeeded and failed will make you a better persuader, and that means a better seller and a better marketer.

Guerrillas ask of successful persuasions: "What insight did I use?" "How did I use it?" Of failures, they ask: "What insight should I have seen?" "How did my attempt miss the mark?" Often failures are merely caused by persuaders failing to understand the person being persuaded.

Guerrilla persuasion means knowing your customers and prospects so well that it's a cinch connecting their goals with yours.

So you see, there's no magic in persuasion, simply research time and energy. Plus, you must do what ad great Claude Hopkins advised in the early 1900s: "The advertising man [or woman] studies the consumer. He tries to place himself in the position of the buyer. His success largely depends on doing that to the exclusion of everything else." In other words, walk a mile — or three — in your customer's shoes.

After all, you can't learn to be a bullfighter unless you've first learned to be a bull. Guerrilla persuading means *connecting*. The connection begins in the mind of the persuader — that's you — and continues until a sale is made. Gentle persuasion can be as powerful as pressured persuasion, so persuade they way you want, in your own style, but first, *connect*.

Jay Conrad Levinson is the author of the internationally acclaimed, best-selling Guerrilla Marketing series of books and co-founder of Guerrilla Marketing International.

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Cellar Rat Ball

Way back when Jake Lorenzo first moved to Sonoma Valley (CA) in 1977, there were plenty of people making wine, but there was no real "wine business." The big annual event was the Sonoma County Harvest Festival.

Awards Night was the one night every cellar rat got a few hours off. They would drive into Santa Rosa, go to the cavernous Vet's Memorial building, and have a hokey little tasting. A table would display some chunks of cheese and French bread, and 20 to 25 wineries would pour samples of their wine.

The people working the tables were cellar rats, their hands black from handling grapes, their eyes sunken from lack of sleep. The event was open to the public, but very few of them were willing to brave the raucous cellar rats.

Cellar rats would often abandon their tables to circulate around the room drinking the other wines. This was no tasting, this was drinking pure and simple. Eventually, the crowd would move to folding chairs in front of the stage, and the awards would be announced.

As best as I can recall from those early years, Dick Arrowood won virtually every award. Of course, the cellar rats heckled him unmercifully and cheered like crazy whenever anyone else won anything. One year I think the biggest ovation went to the Sonoma French Bakery for their award-winning bread.

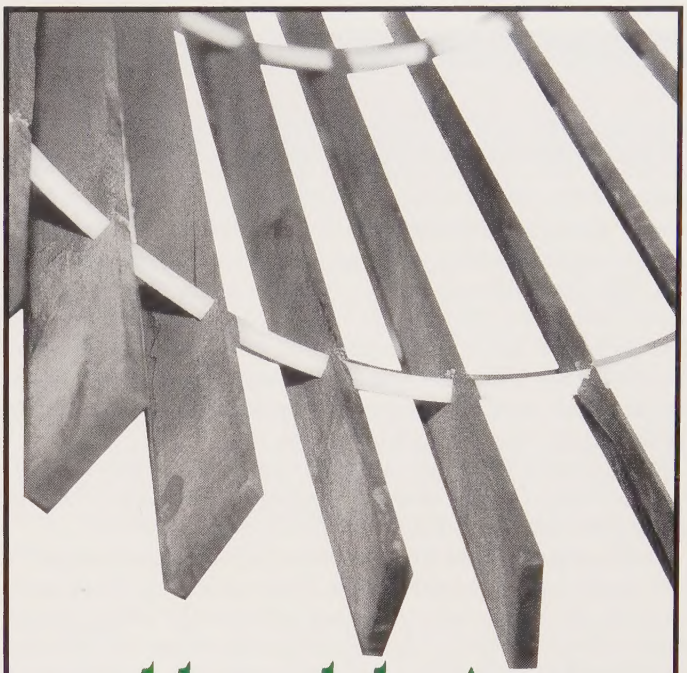
By 1980, Awards Night had moved to the County Fairgrounds, and pretty quickly it became a public relations showcase for the Sonoma County wine industry. Ticket prices went up, and people started dressing in tuxedos and gowns. Press people got all the complimentary tickets that used to go to the cellar rats. Before you knew it, the cellar rats had disappeared from their own Awards Night.

Concurrent to this development with Awards Night, a similar thing was happening at the individual wineries. It was a time-honored tradition that the end of harvest was marked with harvest parties. Usually a pig was roasted. Sometimes a deer was slow cooked in the Mexican *birria* style, but somehow each winery marked the end of each harvest for its working people, the cellar rats. Once again, these parties were loads of fun.

But soon, winery owners couldn't resist inviting growers, and then press people, and then important buyers. Before you knew it, the cellar rats had disappeared from their own harvest parties.

In general, Jake Lorenzo is not a big fan of nostalgia. I am, on the other hand, a big fan of history, especially the history of the common working person. By 1988, I realized that nothing was being done for the cellar rats to celebrate the end of harvest.

Cellar rats could no longer afford to go to their own awards night. They were pretty much ignored at their own harvest



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parties. It was all they could do to scrape together enough money to buy the very wines that they had made, even with winery discounts. Something had to be done.

I got together with Chuy, and we invented The Cellar Rat Ball. The first ball was held in Sonoma at the Vet's building across from the police station. I hired Norton Buffalo to play. We provided beer, wine, Sonoma sausages, cheese, and French bread. The cost was $7.50, but if your hands were stained black from working with grapes or you came wearing rubber boots, then you got in for free.

It was a wild, rollicking good time party. Cellar rats from all over Sonoma County were swapping crush stories, having some good food, and drinking a lot of beer and wine.

Then came 1989, the vintage from Hell. Rain, and lots of it, had made for a miserable crush. Hours piled up, there were no days off. Cellar rats struggled with moldy white grapes but somehow produced decent, drinkable wines. By the time the Cellar Rat Ball rolled around, the cellar rats were ready to party. More than 250 cellar rats showed up.

Poking fun at the Awards Night crowd, many of the cellar rats wore tuxedo jackets with bermudas and rubber boots. Female cellar rats wore prom dresses stylishly set off against their rubber boots. It was a wild, hard drinking night that left Chuy and Jake a little shaken when we got to thinking of liability problems.

We offered the Cellar Rat Ball to the local winery associations. We were willing to put on the event, but we needed help with the liability angle. There were no takers, and the Cellar Rat Ball disappeared.

The wine business boomed in the 1990s. Most wineries doubled their work crews. By 1995, hundreds of cellar rats were working in Sonoma Valley alone. Old timers spoke fondly of the Cellar Rat Ball and wondered if it would ever return. New cellar rats were eager to sample a bit of wine industry history. Rob Larman, owner of Rob's Rib Shack, a funky barbecue restaurant next to a driving range, agreed to host the Ball.

The 1996 Cellar Rat Ball was glorious. About 200 cellar rats showed up. Admission price was $15 and included all the food you could eat, all the Gordon Biersch beer and Sonoma Valley wine you could drink, and the chance to hit a bucket of balls at the old driving range. As soon as the first keg was emptied, a spontaneous beer keg tossing contest was initiated.

Everywhere you went, cellar rats were drinking, having a good time, and swapping crush stories. One cellar rat told how his winery had held its harvest party, and whoever cleaned up the trash threw it onto the pile of stems from harvest. Smoldering embers from the remaining charcoal ignited the mountains of stems, producing a blazing inferno that required the presence of three fire trucks.

Another cellar rat told a story about a disastrous grape delivery. She described how a trucker parked at the top of the crush pad, dropped one trailer loaded with grapes, and then got ready to back the other trailer down to the crusher.

Evidently, the trucker forgot to set the brake on the first trailer. It started rolling down the hill, picking up speed until it rammed into the must pump, ripping it out of the ground and separating it from the must lines. Cellar rats were laughing with tears coming out of their eyes as she described their attempts to piece things back together to continue crushing grapes.

Another story revealed how an inexperienced cellar rat left an air line running into a bladder press until the bladder burst, spraying grapes into every corner of the winery.

Another cellar rat told how he and his co-workers had dealt with a miserable part-time worker. They got the worker to climb into a wine tank to scrub it down. They closed up the tank, locking the worker inside, and then filled the tank with water until the water level was three inches higher than his boot tops. Plenty of cellar rats thought that was a great idea and filed it away for next year.

Plans for next year's ball are already being made. We're trying to get life-size cardboard cut-outs of various winery owners to put out on the driving range. That way the cellar rats will have something to aim at.

The point of all this is that the wine industry too often forgets its own. It's the cellar rats, the vineyard workers, and the tasting room crews who make this whole industry possible. We need to do something *exclusively* for them.

We need to provide a place where workers can share the misery that is harvest and the joys that make the wine business. It is this verbal history that is the true legacy of the wine business. The Cellar Rat Ball is just the ticket. Throw one in your neighborhood next year. Your cellar rats will love you for it! ■

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Juvenal Direct	49	707/254-2000	707/642-2288	Karen Devine
KHS Machines	34	707/763-4844	707/763-6997	Al Burns
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Krones, Inc.	15	414/421-5650	414/421-2222	NA
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